

Rev. A 9/7/84  
Rev. B: 10/8/84  
Date: 12/17/84  
Revision: C  
Rev. D: 3/13/85  
(incompl.)

RECEIVED  
JAN 02 1985

WMD-RAIU  
EPA, REGION V

SPERRY CORPORATION  
DEFENSE PRODUCTS GROUP  
SPERRY PARK FACILITY

EPA  
RCRA Permit A and B  
for Generator and Storage Facility

COPY /

INTRODUCTION

This is the application for Sperry's Sperry Park RCRA permit as a generator and storage facility.

The EPA facility identification number is: MND000823914.

Included is a revised Part A and all the information for the RCRA Part B Permit.

This application meets all requirements for EPA regulations, 40 CFR 122.25, 270.13, 270.14, 270.15, 270.16, 264 Subpart B, C, D, E, G, H, I, J.

TABLE OF CONTENTS

MND 000 823 914

	<u>PAGE</u>
Introduction . . . . .	1
Table of Contents. . . . .	2
A. 'A' Permit, Revised. . . . .	6
Figure A-1, Location Map . . . . .	13
Figure A-2, Facility Drawing . . . . .	14
B. Facility Description . . . . .	15
B-1, General Description . . . . .	15
Figure B-1, B-2 & B-3, Occupancy Facility . . . . .	17
B-2, Topographic Maps (40 CFR 122.25(a)(19), 270.14 (6)(19) . . . . .	20
B-3, Location Information. . . . .	21
B-4, Traffic Patterns. . . . .	21
Figure B-4, Geological Map . . . . .	23
Figure B-5, Site Plan. . . . .	24
Figure B-6, Wind Rose. . . . .	25
Figure B-7, Traffic Flow . . . . .	26
Figure B-8, Floodplain . . . . .	27
C., Waste Characteristics. . . . .	28
C-1, Chemical and Physical Analyses (40 CFR 122.25 (a)(2). . . . .	28
C-2, Waste Analysis Plan . . . . .	30
Table C-1, Hazardous Waste . . . . .	31
Appendix C-1 through C-18, Hazardous Waste Assessment and Analysis . . . .	34
Table C-2, Test Methods. . . . .	72
Table C-3, Sampling Methods. . . . .	73
D., Process Information. . . . .	75

COPY

TABLE OF CONTENTS (continued)

	<u>PAGE</u>
D-1, Containers. . . . .	75
D-2, Pretreatment System . . . . .	76
D-3, Secondary Containment Systems . . . . .	76
D-4, Waste Piles . . . . .	77
D-5, Surface Impoundments. . . . .	77
D-6, Incinerator . . . . .	77
Appendix D-1, Disposal Procedure for Waste Chemicals - ECP 37001 . . . .	78
Appendix D-2, Waste Chemical Dock Procedure - Shepard Road ECP 37002 . .	83
Appendix D-3, Interplant & Private Hauler Hazardous Material ECP 37004 .	88
Appendix D-3A, Manifest Filing Procedure ECP 37028 . . . . .	91A
Appendix D-4, Waste Treatment. . . . .	92
Figure D-1, Pretreatment System. . . . .	95
Figure D-2, Containment Systems. . . . .	96
Figure D-3, Waste Storage Areas. . . . .	97
Section E, Groundwater Monitoring System . . . . .	98
Section F, Procedure to Prevent Hazards. . . . .	99
F-1, Security. . . . .	99
F-2, Inspection Schedule . . . . .	100
F-3, Preparedness and Prevention. . . . .	100
F-4, Preventive Procedures, Structures and Equipment . . . . .	101
F-5, Prevention of Reaction of Ignitable, Reactive and Incompatible Waste . . . . .	101
Figure F-1, Security Print . . . . .	102
Figure F-2, Ground Floor Security. . . . .	103
Figure F-3, Employee and Visitor Register. . . . .	104

TABLE OF CONTENTS (continued)

	<u>PAGE</u>
Figure F-4, Sprinkler System in Chemical Storage Area. . . . .	105
Appendix F-1, Hazardous Waste Facility Inspection ECP 37029. . . . .	106
Appendix F-4, Maintenance Check List . . . . .	144
Appendix F-5, Fire Control Equipment Inspection. . . . .	145
G. Contingency Plan . . . . .	153
G-1, Emergency Response Procedures . . . . .	153
G-2, Arrangements with local Fire Departments. . . . .	153
G-3, Arrangements with Emergency Response Contractors. . . . .	154
G-4, Medical Department Emergency Procedure. . . . .	154
G-5, Separation of Incompatible Waste During a Spill Cleanup . . . . .	154A
Appendix G-1, Emergency Response Procedure ECP 37009 . . . . .	155
Figure G-1, Potential Spill Areas. . . . .	234
Figure G-2, G-3 & G-4 Evacuation Routes. . . . .	235
Appendix G-2, Letter Eagan Fire Department . . . . .	238
Appendix G-3, Medical Department Emergency Procedures. . . . .	240
Section H, Personnel Training. . . . .	248
H-1, Job Titles and Duties . . . . .	248
H-2, Training. . . . .	248
H-3, Emergency Response Training . . . . .	249
Figure H-1 Environmental Mangement Organization . . . . .	250
Appendix H-1, Environmental Management Position Descriptions . . . . .	251
Appendix H-2, Hazardous Waste/Materials Management	
Instructors Training . . . . .	262
Appendix H-3, Training Certificates. . . . .	283

TABLE OF CONTENTS (continued)

	<u>PAGE</u>
Appendix H-4, Truck Drivers Training . . . . .	312
Appendix H-5, Training Move Crew & Janitors. . . . .	323
Appendix H-6, Training Hazardous Materials Coordinator . . . . .	350
Appendix H-7, Guard Training . . . . .	372
Appendix H-8, Hazardous Material Control Program. . . . .	376
Appendix H-9, Emergency Response Training. . . . .	402
Section I, Closure Plan, Post-Closure Plan & Financial Requirement . . .	412
Appendix I-1, Hazardous Waste Closure of Storage & Treatment	
Facilities ECP 37013 . . . . .	413
Appendix I-2, Financial Test . . . . .	419
Certification. . . . .	427

A. PERMIT A, REVISED

Since our initial submission of EPA Permit Part A on November 11, 1980, several items have changed. Our company has had a name change to Sperry Corporation, Computer Systems, Defense Systems Division. The mailing address has changed to: P.O. Box 64525, St. Paul, MN 55164-0525.

A second name change has occurred to: Sperry Corporation, Defense Products Group. The mailing address remains unchanged.

This section of the permit meets all requirements for 40 CFR 122.23 and 270.13.

FORM <b>1</b> GENERAL		U.S. ENVIRONMENTAL PROTECTION AGENCY <b>GENERAL INFORMATION</b> <i>Consolidated Permits Program</i> (Read the "General Instructions" before starting.)		I. EPA I.D. NUMBER	
<div style="text-align: center; font-weight: bold; font-size: 1.2em;">EPA</div> <div style="text-align: center; font-weight: bold; font-size: 1.5em;">PLEASE PLACE LABEL IN THIS SPACE</div>		GENERAL INSTRUCTIONS		T/A C	
		If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent (the area to the left of the label space lists the information that should appear), please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete items I, (II), V, and VI (except VI-B which must be completed regardless). Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.		F M N D 0 0 0 8 2 3 9 1 4 D	
II. POLLUTANT CHARACTERISTICS					
INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.					
SPECIFIC QUESTIONS		MARK "X"		SPECIFIC QUESTIONS	
		YES NO FORM ATTACHED			
A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)		<div style="display: flex; justify-content: space-around;"><div><input checked="" type="checkbox"/></div><div><input type="checkbox"/></div><div><input type="checkbox"/></div></div>		B. Does or will this facility (either existing or proposed) include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)	
C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)		<div style="display: flex; justify-content: space-around;"><div><input checked="" type="checkbox"/></div><div><input type="checkbox"/></div><div><input type="checkbox"/></div></div>		D. Is this a proposed facility (other than those described in A or B above) which will result in a discharge to waters of the U.S.? (FORM 2D)	
E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)		<div style="display: flex; justify-content: space-around;"><div><input checked="" type="checkbox"/></div><div><input type="checkbox"/></div><div><input type="checkbox"/></div></div>		F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)	
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		<div style="display: flex; justify-content: space-around;"><div><input checked="" type="checkbox"/></div><div><input type="checkbox"/></div><div><input type="checkbox"/></div></div>		H. Do you or will you inject at this facility fluids for special processes such as roasting of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)	
I. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		<div style="display: flex; justify-content: space-around;"><div><input checked="" type="checkbox"/></div><div><input type="checkbox"/></div><div><input type="checkbox"/></div></div>		J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)	
III. NAME OF FACILITY					
1 SKIP SPERRY DSS SPERRY PARK					
IV. FACILITY CONTACT					
A. NAME & TITLE (last, first, & title)			B. PHONE (area code & no.)		
2 MARTIN ROGER J ENV MANAGER			6 1 2 4 5 6 4 6 5 4		
V. FACILITY MAILING ADDRESS					
A. STREET OR P.O. BOX					
3 P.O. BOX 64525 M.S. U.I.N.14					
B. CITY OR TOWN				C. STATE	D. ZIP CODE
4 St. PAUL				M N	5 5 1 6 4
VI. FACILITY LOCATION					
A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER					
5 3333 PILOT KNOB ROAD					
B. COUNTY NAME					
DAKOTA					
C. CITY OR TOWN				D. STATE	E. ZIP CODE
6 EAGAN				M N	5 5 1 2 1

**VII. SIC CODES (4-digit, in order of priority)**

## VIII. OPERATOR INFORMATION

## X. EXISTING ENVIRONMENTAL PERMITS

## XI. MAP

XII. NATURE OF BUSINESS (provide a brief description)

XIII. CERTIFICATION (see Instructions)

[illegible]

PA Form 3510-3 (6-80) PAGE 1 OF 5 CONTINUE ON REVERSE

**III. PROCESSES (continued)**

C. SPACE FOR ADDITIONAL PROCESS CODES OR FOR DESCRIBING OTHER PROCESSES (code "T04"). FOR EACH PROCESS ENTERED HERE INCLUDE DESIGN CAPACITY.

**IV. DESCRIPTION OF HAZARDOUS WASTES**

**A. EPA HAZARDOUS WASTE NUMBER** — Enter the four-digit number from 40 CFR, Subpart D for each listed hazardous waste you will handle. If you handle hazardous wastes which are not listed in 40 CFR, Subpart D, enter the four-digit number(s) from 40 CFR, Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.

**B. ESTIMATED ANNUAL QUANTITY** — For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.

**C. UNIT OF MEASURE** — For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

**D. PROCESSES****1. PROCESS CODES:**

For listed hazardous wastes: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in Item I(1) to indicate how the waste will be stored, treated, and/or disposed of at the facility.

For non-listed hazardous wastes: For each characteristic or toxic contaminant entered in column A, select the code(s) from the list of process codes contained in Item I(1) to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possess that characteristic or toxic contaminant.

Notes: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of Item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code(s).

**2. PROCESS DESCRIPTION:** If a code is not listed for a process that will be used, describe the process in the space provided on the form.

**NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER** — Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

1. Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B, C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
2. In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.
3. Repeat step 2 for each other EPA Hazardous Waste Number that can be used to describe the hazardous waste.

**EXAMPLE FOR COMPLETING ITEM IV (shown in line numbers X-1, X-2, X-3, and X-4 below)** — A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

LINE NO. X-1 X-2 X-3 X-4	A. EPA HAZARDOUS WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES	
				1. PROCESS CODES (enter)	2. PROCESS DESCRIPTION (if a code is not entered in D(1))
X-1	K 0 5 4	900	P	T 0 3 D 8 0	
X-2	D 0 0 2	400	P	T 0 3 D 8 0	
X-3	D 0 0 1	100	P	T 0 3 D 8 0	
X-4	D 0 0 2				included with above

Continued from page 2.

NOTE: Photocopy this page before completing if you have more than 26 wastes to list.

Form Approved OMB No. 158-S80004

EPA I.D. NUMBER (enter from page 1)													FOR OFFICIAL USE ONLY													
W M N D 0 0 0 8 2 3 9 1 4													W D U P													
IV. DESCRIPTION OF HAZARDOUS WASTES (continued)																										
LINE NO.	A. EPA HAZARD WASTE NO. (enter code)				B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES																			
							1. PROCESS CODES (enter) 2. PROCESS DESCRIPTION (if a code is not entered in D(1))																			
1	F	0	0	1	7000	P	S	0	1																	Freon, Trichloroethylene
2	F	0	0	2																						Trichloroethane, Methylene Chloride
3	D	0	0	1	12,000	P	S	0	1																	Flammable Solvents
4	F	0	0	6	120,000	P	S	0	1																	Sludge
5	D	0	0	8																						Included above
6	D	0	0	2	10,000	P	S	0	1																	Phenol Stripper
7	D	0	0	2	40,000	P	S	0	1																	Chromic Acid and Ferric Chloride
8	D	0	0	7																						Included above
9	P	0	3	0	500	P	S	0	1																	Cyanide
10	D	0	0	8	7,000	P	S	0	1																	Circuit Board
11	D	0	0	8	5,000	P	S	0	1																	Oil (Could include D004)
12	D	0	0	2	15,000	P	S	0	1																	Fixer
13	D	0	0	1	500	P	S	0	1																	Lab Waste
14	D	0	0	2																						Included above
15	D	0	0	3																						Included above
16	D	0	0	0	700	P	S	0	1																	PCB (MN03)
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										
25																										
26																										

M	N	D	0	0	0	8	2	3	9	1	4	T/A C	6
---	---	---	---	---	---	---	---	---	---	---	---	-------	---

93	10	005
72 2 72	78 76	72 2 72

## 6. ZIP CODE

## C. DATE SIGNED

## Page 12

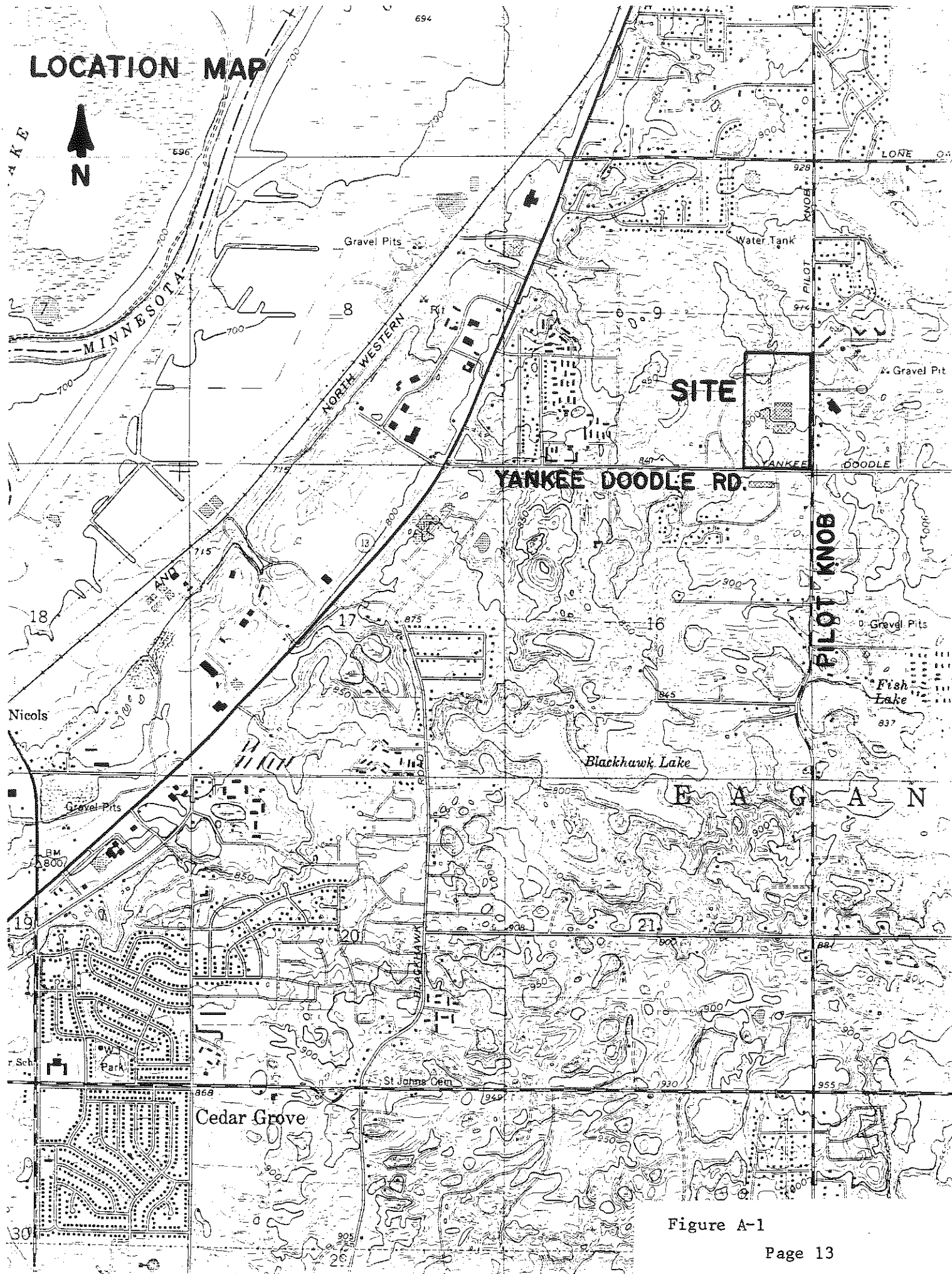
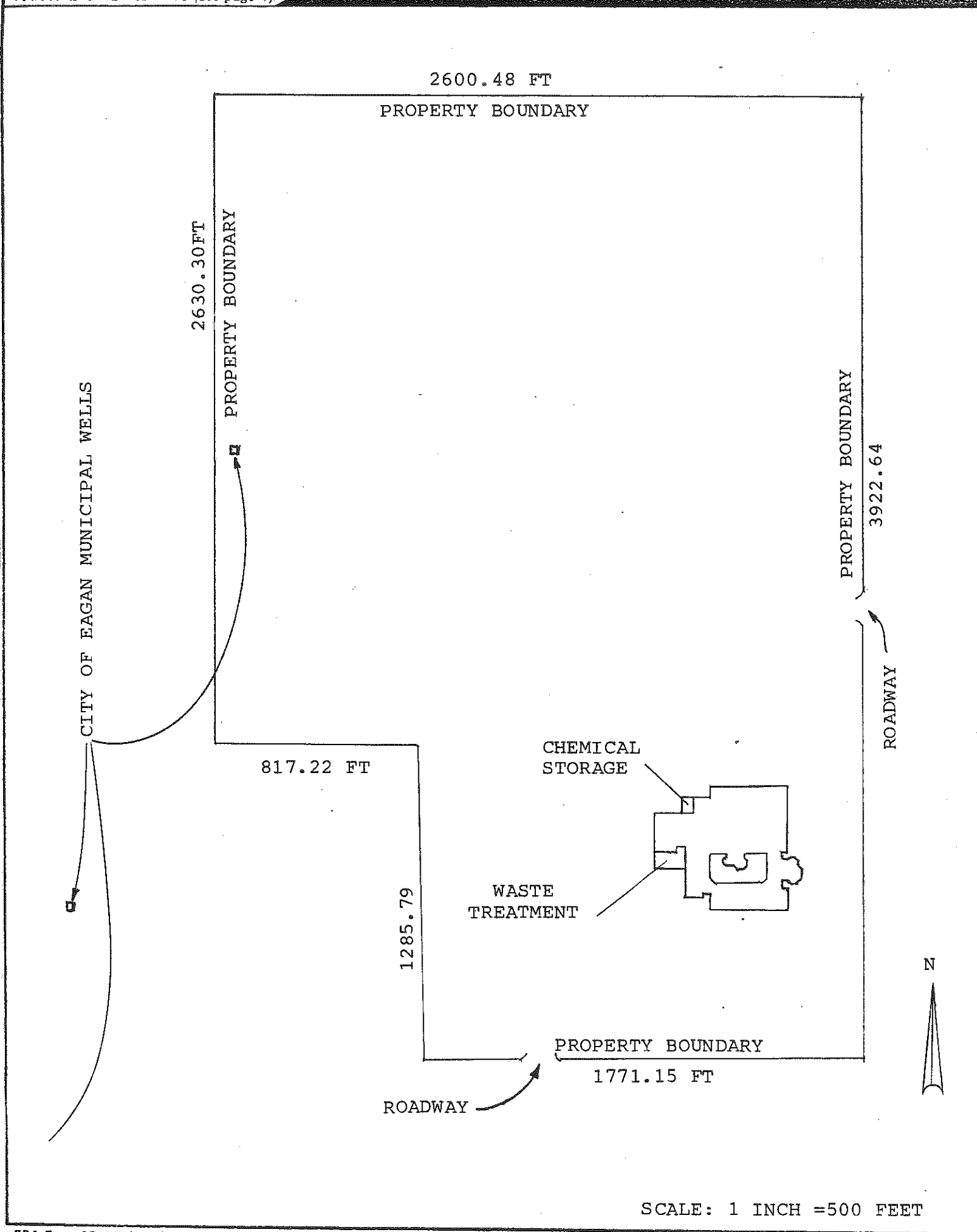


Figure A-1

## V. FACILITY DRAWING (see page 4)



## SECTION B

### FACILITY DESCRIPTION

This section provides a general description of this hazardous waste management facility as required by 40 CFR 122.25 (a) and 270.14 (a)(1).

#### B-1 General Description

Sperry Corporation, Computer Systems, Defense Systems Division, Sperry Park Facility is located in Eagan, Minnesota. The mailing address is:

Sperry Corporation  
Computer Systems, DSD  
P.O. Box 64525  
St. Paul, MN 55164-0525

The street address is:

Sperry Corporation  
Computer Systems, DSD  
Sperry Park  
3333 Pilot Knob Road  
Eagan, MN 55121

This facility is the main engineering facility for this division. It produces U.S. Defense Department specified computer systems. Hazardous wastes are generated in the production of semiconductors and from multiple process labs used for research and development work. The main operations that generate

hazardous waste in this facility are: copper etching, copper and solder plating, and chemical cleaning (acid, alkaline, halogenated solvent and organic solvent). See Figure B-1, B-2 & B-3 (Page 17) for general layout and occupancy of facility.

There is a pretreatment system on site for neutralization and removal of heavy metals from rinse waters prior to discharge into the Metropolitan sanitary sewer system producing a heavy metal sludge. The contacts and parties responsible for hazardous waste management activities at Sperry Park are:

Mark Wilson  
Environmental Management Engineer  
MS-U1N14  
P.O. Box 64525  
St. Paul, MN 55164-0525  
(612) 456-4220

or:

Roger Martin  
Environmental Management Manager  
MS-U1N14  
P.O. Box 64525  
St. Paul, MN 55164-0525  
(612) 456-4654

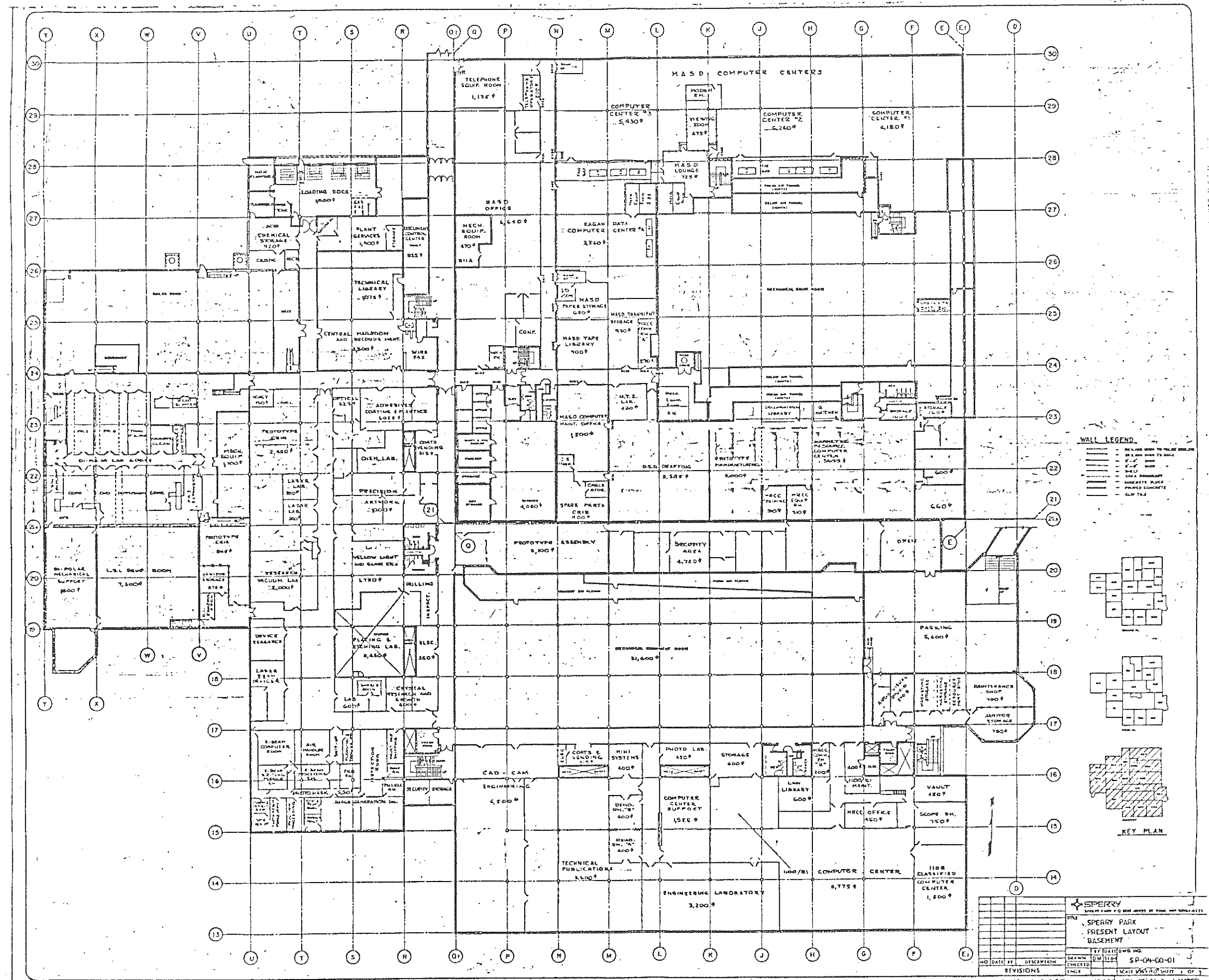


Figure B-1, Occupancy

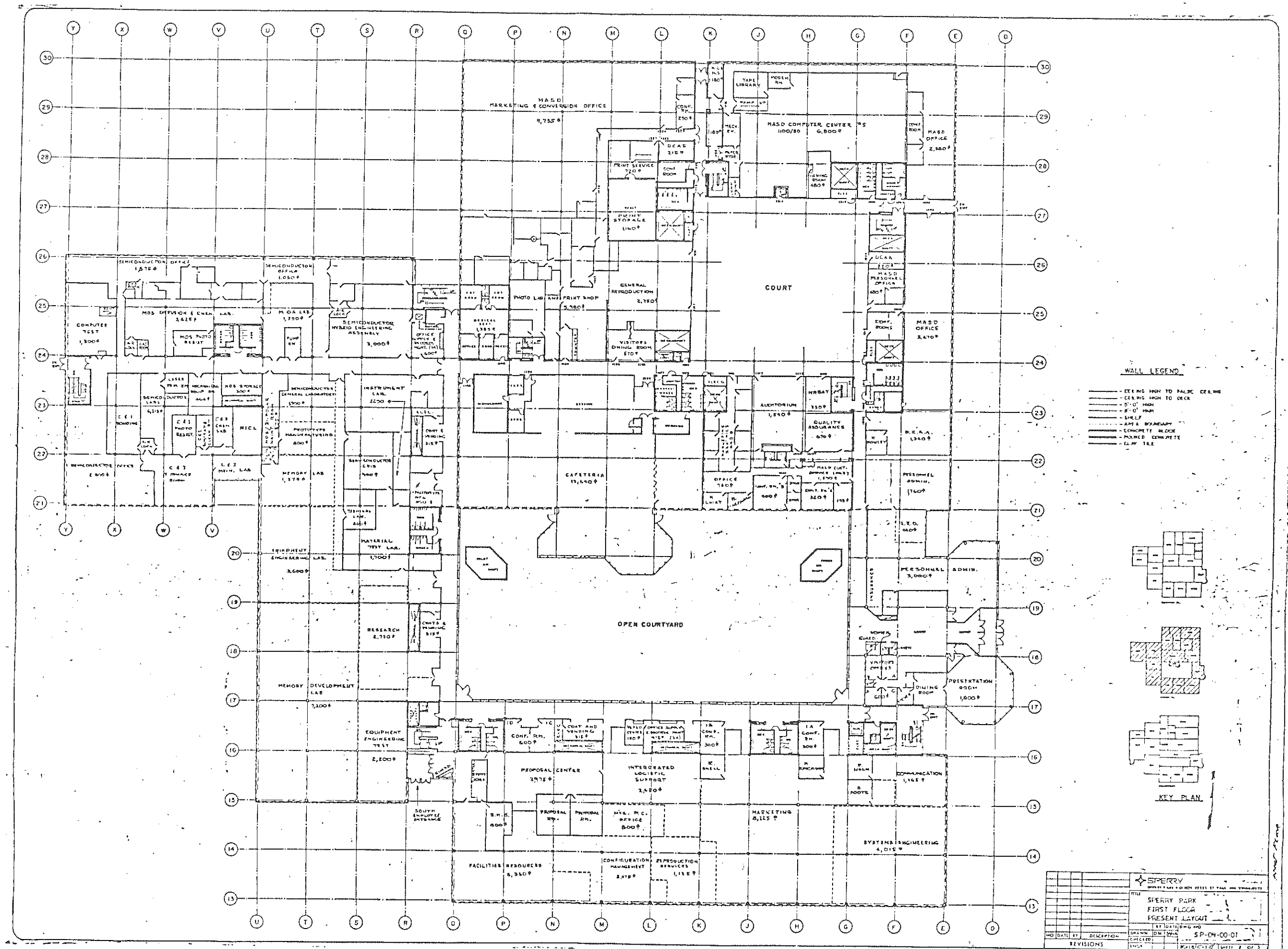


Figure B-2, Occupancy

Figure B-3

B-2 TOPOGRAPHIC MAPS (40 CFR 122.25 (a)(19), 270.14 (b)(19))

Figure B-4, Figure B-5 and Figure B-6 (Pages 23 & 24, 25) show facility location, land use, facility boundaries, storm water catch basins, well and wind rose. Figure B-4 (Page 21) is a U.S. Geological Survey map. The scale is 1" to 2000 feet. It shows land use by color coding. Pink is residential, white is open areas, green is wooded. Figure B-5 (Page 24) is a site plan with a scale of 1" to 200 feet. It shows 2 foot contour lines with locations of storm catch basins. Run off from the facility property runs to these drains. The property boundary lines are shown. The hazardous materials treatment storage and transfer areas are located on the west side of the facility and are shown on the site plan. Land use around the facility includes parking to the North belonging to Sperry, apartments, residential and commercial property to the East and South, with undeveloped area to the west. The location of the fire hydrants are shown on this figure also. The wind rose for this area is shown on Figure B-6 (Page 25). Data for the wind rose was collected from 1945 to 1970 at Minneapolis-St. Paul International Airport. The airport is 3.4 miles Northwest of this facility.

Entry into the facility is controlled by 3 guard stations; the north employee entrance and truck gate, the south employee entrance, and the east lobby. The loading and unloading areas for hazardous materials is shown on figure B-6 (Page 26). The storage and transfer process is handled in later sections.

This facility has separate storm and sanitary sewers. The storm sewer is used for roof runoff, and parking lot runoff. The storm sewer dumps into a small pond 1,200 feet north of the facility. Everything else sewered enters the sani-

tary sewer including the pretreatment system discharge. This goes to the Seneca Metropolitan Waste Control Commission treatment facility.

City of Eagan Municipal wells are shown on the facility drawing on Page 14.

There are no injection wells at this facility.

B-3 LOCATION INFORMATION (40 CFR 122.25 (a)(11), and 264.18), 270.14(b)(11), 270.14(b)(19)(ii)

B-3a Seismic Standard

Because this is an existing rather than a new facility, the seismic standard does not apply.

B-3b Flood Plain Standard

This facility is located 200 feet above the Minnesota River Valley, so it is well above the 100 year flood plain. No barriers are needed for flood control. Pages 27a and 27b show the 100 year flood plain according to the National Flood Insurance program maps.

B-4 TRAFFIC PATTERNS (40 CFR 122.25 (a)(10) and 270.14(b)(10)

The traffic flow patterns, fencing and gates are shown on Figure B-7 (Page 26). All trucks enter the facility for loading or unloading through the truck gate on the North side of the facility from Pilot Knob Road or Yankee Doodle Road. About 6 trucks per month enter the facility to haul hazardous waste. Our lot is bituminous concrete pavement (blacktop) approximately 3" thick with 1" to 2' of sand fill on top of limestone bedrock. Yankee Doodle Road and Pilot Knob Road are Dakota County highways paved with bituminous concrete. Traffic on Pilot

Knob comes from Highways 13, 55 and Interstate 494. Traffic on Yankee Doodle Road comes from Highway 13 on the west end and Highways 494 and 55 on the east end. Highway 13 receives traffic from Highway 110 to the north and Cedar Avenue Freeway to the south.

The normal load rating of Yankee Doodle and Pilot Knob Roads are as follows: 9 ton per axle or 16 ton per tandem. There is spring weight limitation of 7 ton per tandem on Yankee Doodle Road and Pilot Knob Road south of 494 with an additional limitation of 4 ton per tandem north of 494 on Pilot Knob Road.

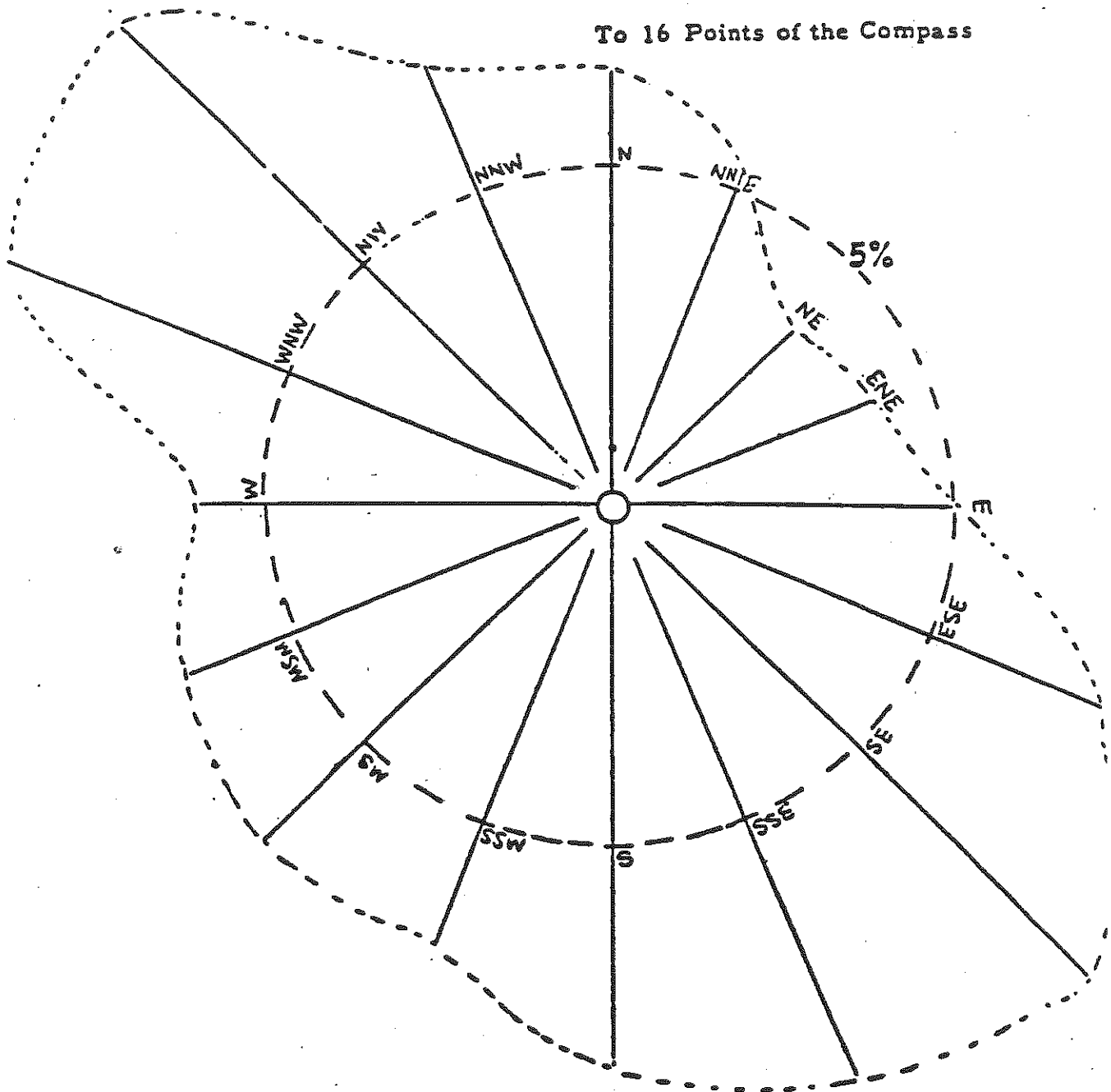
# ANNUAL WIND ROSE

Minneapolis-St. Paul International Airport

1945 to 1970

Bias Removed

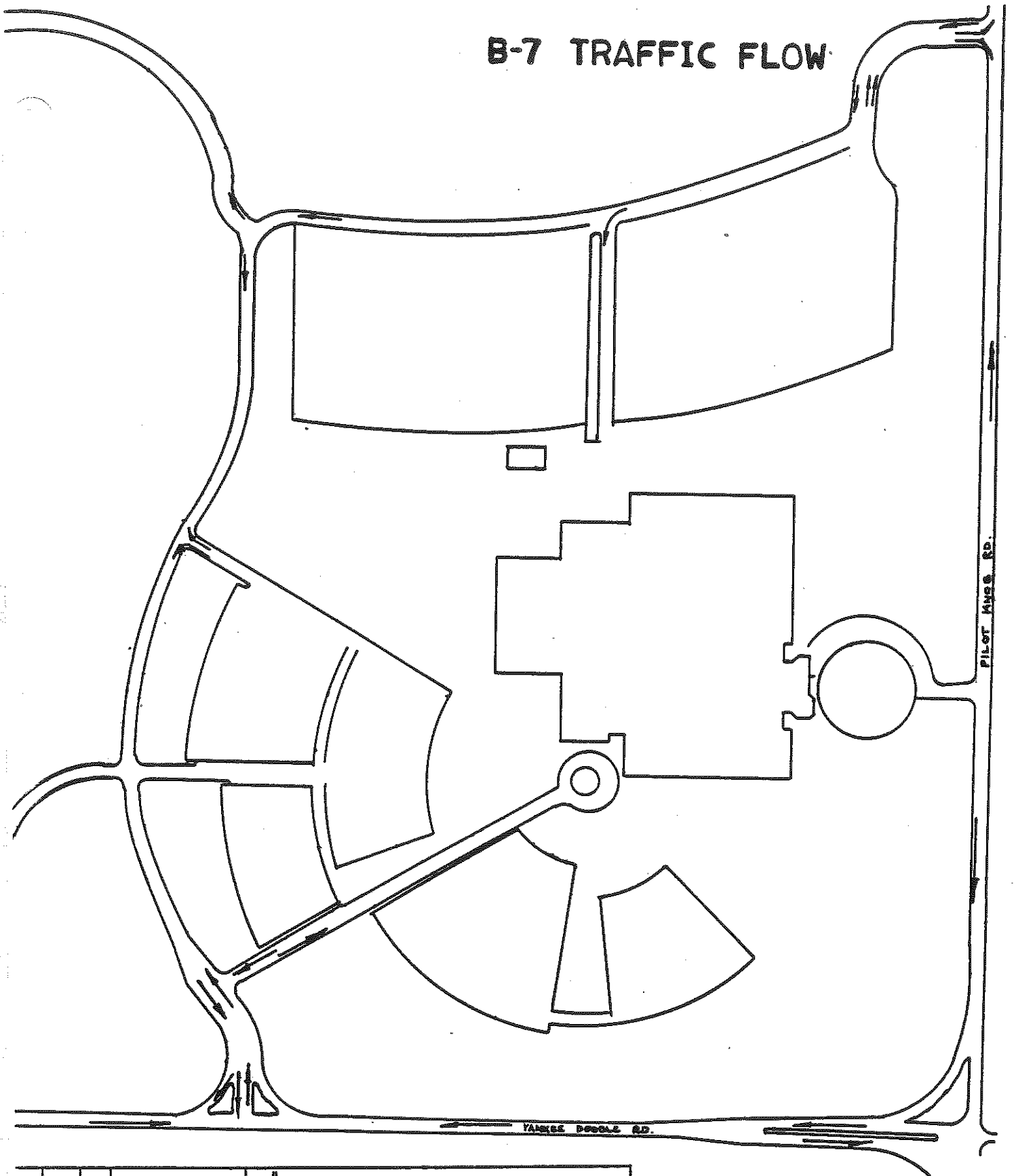
To 16 Points of the Compass




\* Percent frequency that the wind blows from 16 points of the compass over the year without regard to speed. Based on observations from 1945-1970.

Wind Rose

# B-7 TRAFFIC FLOW



				 <b>SPERRY</b> SPERRY PARK PO BOX 43525, ST. PAUL, MN 55164-0525			
				TITLE			
				Sperry Park Traffic Flow			
				BY	DATE	DWG NO.	
DRAWN							
CHECKED							
ENGR						SCALE	SHEET OF
REVISIONS							

Revision A 9/7/84

## SECTION C

### WASTE CHARACTERISTICS

This section describes the chemical and physical nature of hazardous waste stored at the Sperry Park facility. Included is the Waste Analysis plan for sampling, testing and evaluating for the safe handling of our hazardous waste. The information submitted is in accordance with the requirements of 40 CFR 122.25 (a)(2) and (3), 270.14 (b) and 264.13 (a).

#### C-1 CHEMICAL AND PHYSICAL ANALYSES (40 CFR 122.25 (a) (2), 270.14(b)(2) and 264.13(a))

The list of the hazardous wastes handled at the Sperry Park facility are:

1. Chromic acid
2. Stripper - Phenol
3. Stripper - Alkaline A-150
4. Metal hydroxide sludge
5. Printed circuit boards
6. Cyanides, NOS
7. Alcohols, NOS
8. Acetone
9. Methyl Ethyl Ketone
10. Solvents, NOS
11. Xylene
12. Trichloroethane

13. Freon
14. Trichloroethylene
15. Methylene Chloride
16. Poly Chlorinated Biphenyl's, NOS
17. Oil NOS
18. Hazardous Waste NOS (Lab wastes)

This list of hazardous waste are all stored, transfered, or pretreated at this facility. The metal hydroxide sludge and printed circuit boards are stored in drums. All other containerized wastes are stored and transfered in DOT approved 55 gallon drums.

The chromic acid is corrosive and contains hexavalent chrome. The strippers are corrosive. The metal hydroxide sludge has high levels of extractable chrome and lead and is a listed waste. The scrap printed circuit boards have high levels of extractable lead. The cyanides are a listed waste. Alcohols, acetone, methyl ethyl ketone, solvents and xylene are all listed wastes because of their flash points. Trichloroethane, freon, trichloroethylene, and methylene chloride are all listed wastes because of their toxicity. Poly chlorinated biphenyls are a listed waste because of its' toxicity. The oil is hazardous because it contains high levels of arsenic.

Appendixes C-1 through C-18 (Pages 34 through 71) shows the waste analysis results. Included is the RCRA hazard assessment with backup analysis.

WASTE HANDLING: The present disposal method for chromic acid is neutralization and solidification prior to disposal. All other containers are labeled per our labeling system with the contents per appendix's D-1, D-2, D-3 (ECP 37001, 37002 and 37004) (Pages 78-91). The two stripping solutions are solidified and land-filled presently. The metal hydroxide sludge and printed circuit boards are landfilled. Cyanides are oxidized and neutralized. All solvents, waste streams 7-15, 17, and 19 table C-1 (Page 31) are either reclaimed or used as a fuel and incinerated. The small capacitors containing Polychlorinated Biphenyls are landfilled, as are the paint filters. The effluent from our pretreatment system is discharged to the sanitary sewer as is the cyanide after treatment in our pretreatment system. The Lab wastes are landfilled. For all the other handling methods go to applicable sections of this permit application.

## C-2 WASTE ANALYSIS PLAN

### C-2a PARAMETER AND RATIONALE

See table C-1 (Page 31) which shows the analytical parameters that apply to each, and the rationale for their selection.

### C-2b TEST METHODS

Table C-2 (Page 72) shows the test methods used to measure the analytical parameters.

### C-2c SAMPLING METHODS AND FREQUENCY OF ANALYSIS

Table C-3 (Page 73) lists the sampling method used for each waste and frequency of analysis. Attached is additional information for sampling methods.

TABLE C-1

<u>HAZARDOUS WASTE</u>	<u>PARAMETER</u>	<u>RATIONALE</u>
1. Chromic acid	pH EP toxicity (Cr <sup>+6</sup> ) corrosive	This is listed a hazardous waste (D002, D007) due to its corrosivity (pH 2) and its toxicity (hexavalent chrome).
2. Strippers, A20	pH, corrosive	This is listed a hazardous waste (D002) due to its corrosivity (A20 pH 2).
3. Stripper A150	ph, corrosive	This is listed a hazardous waste (D002) due to its corrosivity (pH 12).
4. Methal hydroxide sludge	EP toxicity	This is a listed hazadous waste (F006) due to its toxicity (lead and chrorium).
5. Printed Circuit board	EP toxicity	This is a listed hazardous waste (D008) due to its toxicity (lead).
6. Cyanides	Cyanides toxic	This is a listed hazardous waste P030. Other metals may be present but the cyanide is the most critical for handling.

TABLE C-1 (continued)

<u>HAZARDOUS WASTE</u>	<u>PARAMETER</u>	<u>RATIONALE</u>
7. Alcohol	Flash point ignitable	This is a listed waste (D001) due to its flash point (56° F).
8. Acetone	Flash point ignitable	This is a listed waste (D001) due to its flash point (0°F).
9. Methyl Ethyl Ketone	Flash point ignitable	This is a listed waste (D001) due to its flash point (28°F).
10. Solvents, NOS	Flash point ignitable	This is an ignitable waste (D001) because all waste handled under this category have a flash point of less than 140°F.
11. Xylene	Flash point ignitable	This is a listed waste (D001) due to its flash point (80°F).
12. Trichloroethane	Trichloroethane toxic	This is a listed toxic and process waste (F001, F002).

TABLE C-1 (continued)

<u>HAZARDOUS WASTE</u>	<u>PARAMETER</u>	<u>RATIONALE</u>
13. Freon	Trichlorotri- fluorethane toxic	This is a listed toxic process waste (F001, F002).
14. Trichloroethylene	Trichloroethylene  toxic	This is a listed toxic and process waste (F001, F002).
15. Methylene Chloride	Methylene Chloride  toxic	This is a listed toxic and process waste (F001, F002).
16. Poly Chlorinated Biphenyls	PCB toxicity	This is a toxic waste because it contains PCB according to manufacture of the capacitors. (MN03)
17. Ethyl Acetate	Flash point  ignitable	This is a listed waste (D001) due to its flash point (24°F).
18. Paint Filters	EP Toxicity  toxic	This is a listed waste (D007) due to toxicity (chromium).
19. Oil, NOS	EP Toxicity  toxic	This is a waste due to toxicity (lead). (D008)

TABLE C-1 (continued)

<u>HAZARDOUS WASTE</u>	<u>PARAMETER</u>	<u>RATIONALE</u>
20. Lab Waste	EP toxic, Flash point, pH,	These are waste in small quantities handled as toxic, corrosive or ignitable
21. Copper Sulfate Crystals	pH, Corrosive	This is a hazardous waste (D002) due to its corrosivity (pH 1).
22. Paint Thinner	Flash point, ignitable	This is a hazardous waste (D001) due to its flash point (0°F).
23. Flammable Liquid NOS (Photo Resist)	Flash point, ignitable	This is a hazardous waste (D001) due to its flash point (80°F).
24. Combustible Liquid NOS	None	Non-hazardous - has a flash point of 190°F.
25. Flammable Liquid NOS (Ignitable Liquid Bulk)	Flash point, ignitable EP toxic	This is a hazardous waste (D001, D004 and D008) due to its flash point 90-110°F and toxicity (arsenic, lead).

Date: 1/10/86  
Revision: E

TABLE C-1 (continued)

<u>HAZARDOUS WASTE</u>	<u>PARAMETER</u>	<u>RATIONALE</u>
26. Oil Filters	EP toxicity toxic	This is a hazardous waste (D004 and D008) due to toxicity (arsenic, lead).

APPENDIX C-1 through C-21

HAZARDOUS WASTE ASSESSMENT AND ANALYSIS

## RCRA HAZARD ASSESSMENT

Sample ID: Sperry, Computer Systems, DSD, Shepard Road Facility  
 Lab Analyzed: Chromic Acid Etchant  
Envirite

## 261.21 IGNITABILITY

Flash point - \_\_\_\_\_ °F (Max. allowed 140°F)

## 261.22 CORROSIVITY

pH \_\_\_\_\_ < 1 \_\_\_\_\_ (2 ≤ pH ≤ 12.5 allowed)

## 261.23 REACTIVITY

Acid labile cyanide  
Acid labile sulfide

## 261.24 EP TOXICITY

Sample type: Solid \_\_\_\_\_ Semisolid \_\_\_\_\_ Liquid   X    
If liquid or semisolid, non-filterable solids = \_\_\_\_\_

Note: If sample contains less than 0.5% nonfiltrable solids, the filtrate is the extract.

## Analytical Results

Values are concentrations of constituent in extract.

Constituent	Concentration, mg/l	Maximum concentration allowed, mg/l
Arsenic	-	5.0
Barium	-	100.0
Cadmium	0.49	1.0
Chromium, total	37,500	5.0
Chromium, hexavalent	30,181	5.0
Lead	6.25	5.0
Mercury	0.10	0.2
Selenium	0.3	1.0
Silver	60	5.0
Endrin	-	0.02
Lindane	-	0.4
Methoxychlor	-	10.0
Toxaphene	-	0.5
2,4-D	-	10.0
2,4,5-TP	-	1.0

SPERRY COMPUTER SYSTEMS DSD  
Hazardous Waste Product Survey

Waste Stream Chromic Acid Etchant  
 Process Etch Printed Circuit Boards  
 DOT Name: Corrosive Liquid, NOS UN# UN1760  
 DOT Class: Corrosive Material EPA Code: D002, D008, D007  
 Physical State 70°F: Solid \_\_\_\_\_ Liquid X Sludge \_\_\_\_\_  
 Layers None  
 % Solids: Total 20% Dissolved \_\_\_\_\_  
 Specific Gravity: 1.2 Flash Point: NA  
 pH 1, 3N BTH/# NA  
 Ash Content 18%

## COMPOSITION:

## Organic Components:

PCB NA Other \_\_\_\_\_  
 Phenol NA Other \_\_\_\_\_  
 Other \_\_\_\_\_ Other \_\_\_\_\_  
 Other \_\_\_\_\_ Other \_\_\_\_\_

## Heavy Metals:

	<u>Total</u>	<u>Leachate</u>		<u>Total</u>	<u>Leachate</u>
Ag	_____	_____	Hg	<u>0.1</u>	_____
As	<u>0.5 ppm</u>	_____	Ni	<u>30 ppm</u>	_____
Ba	<u>0.1 ppm</u>	_____	Pb	<u>6 ppm</u>	_____
Cd	<u>1 ppm</u>	_____	Se	<u>0.3 ppm</u>	_____
Cr	<u>30-50 g/l</u>	_____	Zn	<u>1 ppm</u>	_____
Cu	<u>15-25 g/l</u>	_____	Other	_____	_____

## Inorganic:

Total Cyanide NA Free Cyanide 50  
 Other Water 55% Other \_\_\_\_\_  
 Other \_\_\_\_\_ Other \_\_\_\_\_

## QUANTITY

Volume 4345 gal. Per Month \_\_\_\_\_ 1/2 Year \_\_\_\_\_ Year X  
 Drum 55 gal X Bulk \_\_\_\_\_

## RCRA HAZARD ASSESSMENT

Sample ID: Sperry, Computer Systems, DSD, Shepard Road Facility  
Stripper, A-20 Phenol  
 Lab Analyzed: CWM

261.21 IGNITABILITY

Flash point 205 °F (Max. allowed 140°F)

261.22 CORROSIVITY

pH <1.0 (2 < pH < 12.5 allowed)

261.23 REACTIVITY

Acid labile cyanide -  
 Acid labile sulfide -

261.24 EP TOXICITY

Sample type: Solid                      Semisolid                      Liquid X  
 If liquid or semisolid, non-filterable solids =                     

Note: If sample contains less than 0.5% nonfiltrable solids, the filtrate is the extract.

## Analytical Results

Values are concentrations of constituent in extract.

Constituent	Concentration, mg/l	Maximum concentration allowed, mg/l
Arsenic	<u>-</u>	5.0
Barium	<u>-</u>	100.0
Cadmium	<u>-</u>	1.0
Chromium, total	<u>-</u>	5.0
Chromium, hexavalent	<u>-</u>	5.0
Lead	<u>-</u>	5.0
Mercury	<u>-</u>	0.2
Selenium	<u>-</u>	1.0
Silver	<u>-</u>	5.0
Endrin	<u>-</u>	0.02
Lindane	<u>-</u>	0.4
Methoxychlor	<u>-</u>	10.0
Toxaphene	<u>-</u>	0.5
2,4-D	<u>-</u>	10.0
2,4,5-TP	<u>-</u>	1.0

SPERRY COMPUTER SYSTEMS DSD  
Hazardous Waste Product Survey

Waste Stream Stripper, Phenol, A-20  
 Process Photo Resist Stripping  
 DOT Name: Corrosive Liquid NOS UN# UN1760  
 DOT Class: Corrosive Material, EPA Code: D002  
 Physical State 70°F: Solid \_\_\_\_\_ Liquid X Sludge \_\_\_\_\_  
 Layers None  
 % Solids: Total 37% Dissolved \_\_\_\_\_  
 Specific Gravity: 1.3 Flash Point: > 200°F  
 pH 1.0 BTH/# 12,181  
 Ash Content < 0.06

## COMPOSITION:

## Organic Components:

PCB NA Other \_\_\_\_\_  
 Phenol 30,000 mg/l Other Dichlorobenzene 30-40%  
 Other Oil + Grease 5-10% Other \_\_\_\_\_  
 Other \_\_\_\_\_ Other \_\_\_\_\_

## Heavy Metals:

	<u>Total</u>	<u>Leachate</u>		<u>Total</u>	<u>Leachate</u>
Ag	<u>NA</u>	_____	Hg	<u>NA</u>	_____
As	<u>0.0 ppm</u>	_____	Ni	<u>18.6 ppm</u>	_____
Ba	<u>NA</u>	_____	Pb	<u>0.3 ppm</u>	_____
Cd	<u>0.0 ppm</u>	_____	Se	<u>NA</u>	_____
Cr	<u>16.4 ppm</u>	_____	Zn	<u>NA</u>	_____
Cu	<u>NA</u>	_____	Other	_____	_____

## Inorganic:

Total Cyanide NA Free Cyanide NA  
 Other Sulfur 3% Other Water 20-30%  
 Other Chlorine 10% Other \_\_\_\_\_

## QUANTITY

Volume 1210 gal Per Month \_\_\_\_\_ 1/2 Year \_\_\_\_\_ Year X  
 Drum 55 gal X Bulk \_\_\_\_\_

## RCRA HAZARD ASSESSMENT

Sample ID: Sperry, Computer Systems, DSD, Shepard Road Facility  
 Stripper, A150 Alkaline  
 Lab Analyzed: CWM

261.21 IGNITABILITY

Flash point 200 °F (Max. allowed 140°F)

261.22 CORROSIVITY

pH 12.5 (2 < pH < 12.5 allowed)

261.23 REACTIVITY

Acid labile cyanide -  
 Acid labile sulfide -

261.24 EP TOXICITY

Sample type: Solid                      Semisolid                      Liquid                       
 If liquid or semisolid, non-filterable solids =                     

Note: If sample contains less than 0.5% nonfiltrable solids, the filtrate is the extract.

## Analytical Results

Values are concentrations of constituent in extract.

Constituent	Concentration, mg/l	Maximum concentration allowed, mg/l
Arsenic	-	5.0
Barium	-	100.0
Cadmium	-	1.0
Chromium, total	-	5.0
Chromium, hexavalent	-	5.0
Lead	-	5.0
Mercury	-	0.2
Selenium	-	1.0
Silver	-	5.0
Endrin	-	0.02
Lindane	-	0.4
Methoxychlor	-	10.0
Toxaphene	-	0.5
2,4-D	-	10.0
2,4,5-TP	-	1.0

SPERRY COMPUTER SYSTEMS DSD  
Hazardous Waste Product Survey

Waste Stream Stripper, Alakline, A-150  
 Process Stripping Developer PC Boards  
 DOT Name: Alkaline Corrosive Liquid NOS UN# NA1719  
 DOT Class: Corrosive Material EPA Code: D002  
 Physical State 70°F: Solid \_\_\_\_\_ Liquid X Sludge \_\_\_\_\_  
 Layers None  
 % Solids: Total 30% Dissolved \_\_\_\_\_  
 Specific Gravity: 1.2 Flash Point: 200°F  
 pH 12.5 BTH/# \_\_\_\_\_  
 Ash Content 15%

## COMPOSITION:

## Organic Components:

PCB \_\_\_\_\_ Other Oil 20%  
 Phenol \_\_\_\_\_ Other Chlorinated  
 Other Carbitol Solvent 40% Other \_\_\_\_\_  
 Other Glycol Solvent 10% Other \_\_\_\_\_

## Heavy Metals:

	<u>Total</u>	<u>Leachate</u>		<u>Total</u>	<u>Leachate</u>
Ag _____			Hg _____		
As _____	<u>1.2 ppm</u>		Ni _____	<u>33 ppm</u>	
Ba _____			Pb _____	<u>1.2 ppm</u>	
Cd _____	<u>12 ppm</u>		Se _____		
Cr _____	<u>6.3 ppm</u>		Zn _____	<u>27 ppm</u>	
Cu _____	<u>14 ppm</u>		Other _____		

## Inorganic:

Total Cyanide \_\_\_\_\_ Free Cyanide \_\_\_\_\_  
 Other NaOH 10% Other \_\_\_\_\_  
 Other Water 20% Other \_\_\_\_\_

## QUANTITY

Volume 100 gal Per Month \_\_\_\_\_ 1/2 Year \_\_\_\_\_ Year X  
 Drum 55 gal X Bulk \_\_\_\_\_

## RCRA HAZARD ASSESSMENT

Sample ID: Sperry, Computer Systems, DSD, Shepard Road Facility  
 Lab Analyzed: Metal Hydroxide Sludge  
CWM

261.21 IGNITABILITY

Flash point - °F (Max. allowed 140°F)

261.22 CORROSIVITY

pH - (2 < pH < 12.5 allowed)

261.23 REACTIVITY

Acid labile cyanide -  
 Acid labile sulfide -

261.24 EP TOXICITY

Sample type: Solid X Semisolid - Liquid -  
 If liquid or semisolid, non-filterable solids = -

Note: If sample contains less than 0.5% nonfiltrable solids, the filtrate is the extract.

## Analytical Results

Values are concentrations of constituent in extract.

Constituent	Concentration, mg/l	Maximum concentration allowed, mg/l
Arsenic	-	5.0
Barium	-	100.0
Cadmium	-	1.0
Chromium, total	50	5.0
Chromium, hexavalent	-	5.0
Lead	350	5.0
Mercury	-	0.2
Selenium	-	1.0
Silver	-	5.0
Endrin	-	0.02
Lindane	-	0.4
Methoxychlor	-	10.0
Toxaphene	-	0.5
2,4-D	-	10.0
2,4,5-TP	-	1.0

SPERRY COMPUTER SYSTEMS DSD  
Hazardous Waste Product Survey

Waste Stream Metal Hydroxide Sludge  
Process Pretreatment System, Plating and Etching, PC Boards  
DOT Name: Hazardous Waste Solid, NOS UN# NA9189  
DOT Class: ORM-E EPA Code: F006  
Physical State 70°F: Solid                      Liquid                      Sludge X  
Layers                      Test for liquids: None                      As per CFR Thursday Feb. 25, 1983 PP831  
Free liquid  
% Solids: Total 30-40% Dissolved                       
Specific Gravity: 9 lb/gal Flash Point: 200°F  
pH 7-8 BTH/#                       
Ash Content                     

COMPOSITION:

Organic Components:

PCB                      Other                       
Phenol                      Other                       
Other                      Other                       
Other                      Other                     

Heavy Metals:

	<u>Total</u>	<u>Leachate</u>		<u>Total</u>	<u>Leachate</u>
Ag <u>                    </u>	<u>                    </u>	<u>                    </u>	Hg <u>                    </u>	<u>                    </u>	<u>                    </u>
As <u>                    </u>	<u>                    </u>	<u>                    </u>	Ni <u>                    </u>	<u>                    </u>	<u>                    </u>
Ba <u>                    </u>	<u>                    </u>	<u>                    </u>	Pb <u>                    </u>	<u>0.5-2%</u>	<u>350 ppm</u>
Cd <u>                    </u>	<u>                    </u>	<u>                    </u>	Se <u>                    </u>	<u>                    </u>	<u>                    </u>
Cr <u>                    </u>	<u>0.5-2%</u>	<u>50 ppm</u>	Zn <u>                    </u>	<u>                    </u>	<u>                    </u>
Cu <u>                    </u>	<u>0.5-2%</u>	<u>120 ppm</u>	Other <u>                    </u>	<u>                    </u>	<u>                    </u>

Inorganic:

Total Cyanide                      Free Cyanide                       
Other Calcium Flouride 5-10% Other Solids (Sand, plastic) 5-10%  
Other Water 60-70% Other                       
(No free liquids)

QUANTITY

Volume 8,050 lb. Per Month X 1/2 Year                      Year                       
Drum 55 gal                      X                      Bulk



## INTERCOMMUNICATION

TO: Dan MacDonald

FROM (NAME & EXT): Jim Rusinak - 4656

LOCATION & DATE: St. Paul - 17 August 1984

DEPARTMENT & M.S.: Env. Mgmt. - S1P17

CC:

SUBJECT: SLUDGE TESTING FOR LIQUID

### OBSERVATION OF SLUDGE SAMPLES:

#### Plant 8 - Sperry Park

Procedure: Approximately 100 MLS (total volume) of sludge were chopped and placed in a paper, conical filter, and covered with a watch glass.

Results: After five minutes, the only moisture observed was a condensate (Thin Film) on 50% of the watch glass' lower surface. (Note: Muslin in contact with sample barely absorbed any moisture, with no wicking action).

The same sample was then packed into the apex of the filter, with the only difference being minor wicking.

#### Plant 1 - Shepard Road

Results same as Sperry Park.

DSD IS PEOPLE  
WORKING AS A TEAM  
CHALLENGED TO DO THEIR BEST  
IN AN OPEN ATMOSPHERE  
OF TRUST, RESPECT AND CONCERN FOR THE INDIVIDUAL

Revision A 9/7/84  
Page 42A

## RCRA HAZARD ASSESSMENT

Sample ID: Sperry, Computer Systems, DSD, Shepard Road Facility  
 Printed Circuit Boards, Scrap  
 Lab Analyzed: CWM

261.21 IGNITABILITY

Flash point - °F (Max. allowed 140°F)

261.22 CORROSIVITY

pH - (2 ≤ pH ≤ 12.5 allowed)

261.23 REACTIVITY

Acid labile cyanide -  
 Acid labile sulfide -

261.24 EP TOXICITY

Sample type: Solid X Semisolid            Liquid             
 If liquid or semisolid, non-filterable solids =           

Note: If sample contains less than 0.5% nonfiltrable solids, the filtrate is the extract.

## Analytical Results

Values are concentrations of constituent in extract.

Constituent	Concentration, mg/l	Maximum concentration allowed, mg/l
Arsenic	<u>-</u>	5.0
Barium	<u>-</u>	100.0
Cadmium	<u>-</u>	1.0
Chromium, total	<u>-</u>	5.0
Chromium, hexavalent	<u>-</u>	5.0
Lead	<u>11</u>	5.0
Mercury	<u>-</u>	0.2
Selenium	<u>-</u>	1.0
Silver	<u>-</u>	5.0
Endrin	<u>          </u>	0.02
Lindane	<u>          </u>	0.4
Methoxychlor	<u>          </u>	10.0
Toxaphene	<u>          </u>	0.5
2,4-D	<u>          </u>	10.0
2,4,5-TP	<u>          </u>	1.0

SPERRY COMPUTER SYSTEMS DSD  
Hazardous Waste Product Survey

Waste Stream Printed Circuit Boards ScrapProcess P.C. ManufacturingDOT Name: Hazardous Waste Solid, NOS UN# NA9189DOT Class: ORM-A EPA Code: D008Physical State 70°F: Solid                      Liquid X Sludge                     Layers Boards Layered% Solids: Total 100 Dissolved                     Specific Gravity: 3.33 Flash Point: > 200°FpH NA BTH/# NAAsh Content NA

## COMPOSITION:

## Organic Components:

PCB                      Other Epoxy 90%Phenol 22 ppm Other                     Other                      Other                     Other                      Other                     

## Heavy Metals:

	<u>Total</u>	<u>Leachate</u>		<u>Total</u>	<u>Leachate</u>
Ag	<u>5 ppm</u>	<u>                    </u>	Hg	<u>&lt; 0.002 ppm</u>	<u>                    </u>
As	<u>&lt; 0.01 ppm</u>	<u>                    </u>	Ni	<u>1.1 ppm</u>	<u>                    </u>
Ba	<u>1.5 ppm</u>	<u>                    </u>	Pb	<u>11,000 ppm</u>	<u>11 ppm</u>
Cd	<u>0.2 ppm</u>	<u>                    </u>	Se	<u>0.1 ppm</u>	<u>                    </u>
Cr	<u>17 ppm</u>	<u>                    </u>	Zn	<u>2600 ppm</u>	<u>                    </u>
Cu	<u>430,000 ppm</u>	<u>                    </u>	Other	<u>                    </u>	<u>                    </u>

## Inorganic:

Total Cyanide NA Free Cyanide NAOther                      Other                     Other                      Other                     

## QUANTITY

Volume 2,800 lb Per Month                      1/2 Year                      Year XDrum 55 gal X Bulk

## RCRA HAZARD ASSESSMENT

Sample ID: Sperry, Computer Systems, DSD, Shepard Road Facility  
 Lab Analyzed: Cyanides  
Sperry

261.21 IGNITABILITY

Flash point - - °F (Max. allowed 140°F)

261.22 CORROSIVITY

pH - (2 < pH < 12.5 allowed)

261.23 REACTIVITY

Acid labile cyanide 660 ppm  
 Acid labile sulfide -

261.24 EP TOXICITY

Sample type: Solid - Semisolid - Liquid X  
 If liquid or semisolid, non-filterable solids = -

Note: If sample contains less than 0.5% nonfilterable solids, the filtrate is the extract.

## Analytical Results

Values are concentrations of constituent in extract.

Constituent	Concentration, mg/l	Maximum concentration allowed, mg/l
Arsenic	-	5.0
Barium	-	100.0
Cadmium	1,100	1.0
Chromium, total	-	5.0
Chromium, hexavalent	-	5.0
Lead	2.5	5.0
Mercury	-	0.2
Selenium	-	1.0
Silver	1.5	5.0
Endrin	-	0.02
Lindane	-	0.4
Methoxychlor	-	10.0
Toxaphene	-	0.5
2,4-D	-	10.0
2,4,5-TP	-	1.0

SPERRY COMPUTER SYSTEMS DSD  
Hazardous Waste Product Survey

Waste Stream Cyanides  
 Process Plating  
 DOT Name: Cyanides, NOS UN# NA1588  
 DOT Class: Poison EPA Code: P030  
 Physical State 70°F: Solid            Liquid X Sludge             
 Layers NA  
 % Solids: Total NA Dissolved             
 Specific Gravity: 1.1 Flash Point: > 200°F  
 pH 13 BTH/# NA  
 Ash Content NA

## COMPOSITION:

## Organic Components:

PCB NA Other             
 Phenol NA Other             
 Other            Other             
 Other            Other           

## Heavy Metals:

	<u>Total</u>	<u>Leachate</u>		<u>Total</u>	<u>Leachate</u>
Ag	<u>1.5 ppm</u>	<u>          </u>	Hg	<u>          </u>	<u>          </u>
As	<u>          </u>	<u>          </u>	Ni	<u>40 ppm</u>	<u>          </u>
Ba	<u>          </u>	<u>          </u>	Pb	<u>2.5 ppm</u>	<u>          </u>
Cd	<u>1,100 ppm</u>	<u>          </u>	Se	<u>          </u>	<u>          </u>
Cr	<u>          </u>	<u>          </u>	Zn	<u>5 ppm</u>	<u>          </u>
Cu	<u>3,800 ppm</u>	<u>          </u>	Other Fe	<u>10 ppm</u>	<u>          </u>

## Inorganic:

Total Cyanide 660 ppm Free Cyanide             
 Other            Other             
 Other            Other           

## QUANTITY

Volume 200 gal Per Month            1/2 Year            Year X  
 Drum 55 gal X Bulk

## RCRA HAZARD ASSESSMENT

Sample ID: Sperry, Computer Systems, DSD, Shepard Road Facility  
 Lab Analyzed: Alcohol  
Hydrite

261.21 IGNITABILITY

Flash point 56 °F (Max. allowed 140°F)

261.22 CORROSIVITY

pH - (2 < pH < 12.5 allowed)

261.23 REACTIVITY

Acid labile cyanide -  
 Acid labile sulfide -

261.24 EP TOXICITY

Sample type: Solid - Semisolid - Liquid -  
 If liquid or semisolid, non-filterable solids = -

Note: If sample contains less than 0.5% nonfilterable solids, the filtrate is the extract.

## Analytical Results

Values are concentrations of constituent in extract.

Constituent	Concentration, mg/l	Maximum concentration allowed, mg/l
Arsenic	-	5.0
Barium	-	100.0
Cadmium	-	1.0
Chromium, total	-	5.0
Chromium, hexavalent	-	5.0
Lead	-	5.0
Mercury	-	0.2
Selenium	-	1.0
Silver	-	5.0
Endrin	-	0.02
Lindane	-	0.4
Methoxychlor	-	10.0
Toxaphene	-	0.5
2,4-D	-	10.0
2,4,5-TP	-	1.0

SPERRY COMPUTER SYSTEMS DSD  
Hazardous Waste Product Survey

Waste Stream Alcohol  
 Process Cleaning  
 DOT Name: Alcohol NOS UN# UN1987  
 DOT Class: Flammable EPA Code: D001  
 Physical State 70°F: Solid \_\_\_\_\_ Liquid X Sludge \_\_\_\_\_  
 Layers None  
 % Solids: Total 5-10% Dissolved \_\_\_\_\_  
 Specific Gravity: 0.9 Flash Point: 60°F  
 pH 6 BTH/# NA  
 Ash Content NA

## COMPOSITION:

## Organic Components:

PCB NA Other Alcohol 60-90%  
 Phenol NA Other \_\_\_\_\_  
 Other \_\_\_\_\_ Other \_\_\_\_\_  
 Other \_\_\_\_\_ Other \_\_\_\_\_

## Heavy Metals:

	<u>Total</u>	<u>Leachate</u>		<u>Total</u>	<u>Leachate</u>
Ag _____	_____	_____	Hg _____	_____	_____
As _____	_____	_____	Ni _____	_____	_____
Ba _____	_____	_____	Pb _____	<u>13 ppm</u>	_____
Cd _____	<u>0.4 ppm</u>	_____	Se _____	_____	_____
Cr _____	<u>2.5 ppm</u>	_____	Zn _____	<u>34 ppm</u>	_____
Cu _____	<u>3.6 ppm</u>	_____	Other _____	_____	_____

## Inorganic:

Total Cyanide \_\_\_\_\_ Free Cyanide \_\_\_\_\_  
 Other Water 5% Other \_\_\_\_\_  
 Other \_\_\_\_\_ Other \_\_\_\_\_

## QUANTITY

Volume 650 gal. Per Month \_\_\_\_\_ 1/2 Year \_\_\_\_\_ Year X  
 Drum 55 gal \_\_\_\_\_ X \_\_\_\_\_ Bulk \_\_\_\_\_

## RCRA HAZARD ASSESSMENT

Sample ID: Sperry, Computer Systems, DSD, Shepard Road Facility  
Acetone  
 Lab Analyzed: Hydrite

261.21 IGNITABILITY

Flash point 0 °F (Max. allowed 140°F)

261.22 CORROSIVITY

pH - (2 < pH < 12.5 allowed)

261.23 REACTIVITY

Acid labile cyanide -  
 Acid labile sulfide -

261.24 EP TOXICITY

Sample type: Solid - Semisolid - Liquid -  
 If liquid or semisolid, non-filterable solids = -

Note: If sample contains less than 0.5% nonfiltrable solids, the filtrate is the extract.

## Analytical Results

Values are concentrations of constituent in extract.

Constituent	Concentration, mg/l	Maximum concentration allowed, mg/l
Arsenic	<u>                    </u>	5.0
Barium	<u>                    </u>	100.0
Cadmium	<u>                    </u>	1.0
Chromium, total	<u>                    </u>	5.0
Chromium, hexavalent	<u>                    </u>	5.0
Lead	<u>                    </u>	5.0
Mercury	<u>                    </u>	0.2
Selenium	<u>                    </u>	1.0
Silver	<u>                    </u>	5.0
Endrin	<u>                    </u>	0.02
Lindane	<u>                    </u>	0.4
Methoxychlor	<u>                    </u>	10.0
Toxaphene	<u>                    </u>	0.5
2,4-D	<u>                    </u>	10.0
2,4,5-TP	<u>                    </u>	1.0

SPERRY COMPUTER SYSTEMS DSD  
Hazardous Waste Product Survey

Waste Stream Acetone  
 Process Cleaning  
 DOT Name: Acetone UN# UN1090  
 DOT Class: Flammable Liquid EPA Code: U002  
 Physical State 70°F: Solid \_\_\_\_\_ Liquid X Sludge \_\_\_\_\_  
 Layers None  
 % Solids: Total 6% Dissolved \_\_\_\_\_  
 Specific Gravity: 0.8 Flash Point: 20°F  
 pH 6 BTH/# \_\_\_\_\_  
 Ash Content \_\_\_\_\_

## COMPOSITION:

## Organic Components:

PCB \_\_\_\_\_ Other Acetone 60-95%  
 Phenol \_\_\_\_\_ Other \_\_\_\_\_  
 Other \_\_\_\_\_ Other \_\_\_\_\_  
 Other \_\_\_\_\_ Other \_\_\_\_\_

## Heavy Metals:

	<u>Total</u>	<u>Leachate</u>		<u>Total</u>	<u>Leachate</u>
Ag _____	_____	_____	Hg _____	_____	_____
As _____	_____	_____	Ni _____	_____	_____
Ba _____	_____	_____	Pb _____	<u>6 ppm</u>	_____
Cd _____	<u>0.4 ppm</u>	_____	Se _____	_____	_____
Cr _____	<u>35 ppm</u>	_____	Zn _____	<u>140 ppm</u>	_____
Cu _____	<u>2 ppm</u>	_____	Other _____	_____	_____

## Inorganic:

Total Cyanide \_\_\_\_\_ Free Cyanide \_\_\_\_\_  
 Other \_\_\_\_\_ Other \_\_\_\_\_  
 Other \_\_\_\_\_ Other \_\_\_\_\_

## QUANTITY

Volume 275 gal Per Month \_\_\_\_\_ 1/2 Year \_\_\_\_\_ Year X  
 Drum 55 gal X Bulk \_\_\_\_\_

## RCRA HAZARD ASSESSMENT

Sample ID: Sperry, Computer Systems, DSD, Shepard Road Facility  
 Lab Analyzed: Methyl Ethyl Ketone  
Hydrite

261.21 IGNITABILITY

Flash point < 140 °F (Max. allowed 140°F)

261.22 CORROSIVITY

pH - (2 < pH < 12.5 allowed)

261.23 REACTIVITY

Acid labile cyanide -  
 Acid labile sulfide -

261.24 EP TOXICITY

Sample type: Solid - Semisolid - Liquid -  
 If liquid or semisolid, non-filterable solids = -

Note: If sample contains less than 0.5% nonfilterable solids, the filtrate is the extract.

## Analytical Results

Values are concentrations of constituent in extract.

Constituent	Concentration, mg/l	Maximum concentration allowed, mg/l
Arsenic	<u>                    </u>	5.0
Barium	<u>                    </u>	100.0
Cadmium	<u>                    </u>	1.0
Chromium, total	<u>                    </u>	5.0
Chromium, hexavalent	<u>                    </u>	5.0
Lead	<u>                    </u>	5.0
Mercury	<u>                    </u>	0.2
Selenium	<u>                    </u>	1.0
Silver	<u>                    </u>	5.0
Endrin	<u>                    </u>	0.02
Lindane	<u>                    </u>	0.4
Methoxychlor	<u>                    </u>	10.0
Toxaphene	<u>                    </u>	0.5
2,4-D	<u>                    </u>	10.0
2,4,5-TP	<u>                    </u>	1.0

SPERRY COMPUTER SYSTEMS DSD  
Hazardous Waste Product Survey

Waste Stream Methyl Ethyl Ketone  
 Process Cleaning  
 DOT Name: Methyl Ethyl Ketone UN# UN1193  
 DOT Class: Flammable Liquid NOS EPA Code: U159  
 Physical State 70°F: Solid \_\_\_\_\_ Liquid X Sludge \_\_\_\_\_  
 Layers None  
 % Solids: Total 3% Dissolved \_\_\_\_\_  
 Specific Gravity: 0.87 Flash Point: 40°F  
 pH 6 BTH/# \_\_\_\_\_  
 Ash Content NA

## COMPOSITION:

## Organic Components:

PCB \_\_\_\_\_ Other Methyl Ethyl Ketone 60-95%  
 Phenol \_\_\_\_\_ Other \_\_\_\_\_  
 Other \_\_\_\_\_ Other \_\_\_\_\_  
 Other \_\_\_\_\_ Other \_\_\_\_\_

## Heavy Metals:

	<u>Total</u>	<u>Leachate</u>		<u>Total</u>	<u>Leachate</u>
Ag _____	_____	_____	Hg _____	_____	_____
As _____	_____	_____	Ni _____	_____	_____
Ba _____	_____	_____	Pb _____	_____	_____
Cd _____	<u>0.3 ppm</u>	_____	Se _____	_____	_____
Cr _____	_____	_____	Zn _____	<u>2.8 ppm</u>	_____
Cu _____	<u>0.5 ppm</u>	_____	Other _____	_____	_____

## Inorganic:

Total Cyanide \_\_\_\_\_ Free Cyanide \_\_\_\_\_  
 Other \_\_\_\_\_ Other \_\_\_\_\_  
 Other \_\_\_\_\_ Other \_\_\_\_\_

## QUANTITY

Volume 50 gal. Per Month \_\_\_\_\_ 1/2 Year \_\_\_\_\_ Year X  
 Drum 55 gal X Bulk \_\_\_\_\_

## RCRA HAZARD ASSESSMENT

Sample ID: Sperry, Computer Systems, DSD, Shepard Road Facility  
 Lab Analyzed: Solvent NOS  
Hydrite

261.21 IGNITABILITY

Flash point 20° - 100° °F (Max. allowed 140°F)

261.22 CORROSIVITY

pH - (2 < pH < 12.5 allowed)

261.23 REACTIVITY

Acid labile cyanide -  
 Acid labile sulfide -

261.24 EP TOXICITY

Sample type: Solid - Semisolid - Liquid -  
 If liquid or semisolid, non-filterable solids = -

Note: If sample contains less than 0.5% nonfilterable solids, the filtrate is the extract.

## Analytical Results

Values are concentrations of constituent in extract.

Constituent	Concentration, mg/l	Maximum concentration allowed, mg/l
Arsenic	-	5.0
Barium	-	100.0
Cadmium	-	1.0
Chromium, total	-	5.0
Chromium, hexavalent	-	5.0
Lead	-	5.0
Mercury	-	0.2
Selenium	-	1.0
Silver	-	5.0
Endrin	-	0.02
Lindane	-	0.4
Methoxychlor	-	10.0
Toxaphene	-	0.5
2,4-D	-	10.0
2,4,5-TP	-	1.0

SPERRY COMPUTER SYSTEMS DSD  
Hazardous Waste Product Survey

Waste Stream Solvent NOS  
 Process Cleaning, Adhesives, Epoxy  
 DOT Name: Flammable Liquid, NOS UN# UN1219  
 DOT Class: Flammable Liquid EPA Code: D001  
 Physical State 70°F: Solid                      Liquid                      X                      Sludge                       
 Layers NA  
 % Solids: Total NA Dissolved                       
 Specific Gravity: 0.89 Flash Point: 20°-80°F  
 pH NA BTH/# NA  
 Ash Content NA

## COMPOSITION:

## Organic Components:

PCB <u>                    </u>	Other Acetone <u>5%</u>
Phenol <u>                    </u>	Other Alcohol <u>40-60%</u>
Other Toluene <u>15-30%</u>	Other MEK <u>10-20%</u>
Other Naptha <u>5-20%</u>	Other Xylene <u>5%</u>

## Heavy Metals:

	<u>Total</u>	<u>Leachate</u>		<u>Total</u>	<u>Leachate</u>
Ag <u>                    </u>	<u>                    </u>	<u>                    </u>	Hg <u>                    </u>	<u>                    </u>	<u>                    </u>
As <u>                    </u>	<u>                    </u>	<u>                    </u>	Ni <u>                    </u>	<u>                    </u>	<u>                    </u>
Ba <u>                    </u>	<u>                    </u>	<u>                    </u>	Pb <u>                    </u>	<u>                    </u>	<u>                    </u>
Cd <u>                    </u>	<u>                    </u>	<u>                    </u>	Se <u>                    </u>	<u>                    </u>	<u>                    </u>
Cr <u>                    </u>	<u>                    </u>	<u>                    </u>	Zn <u>                    </u>	<u>                    </u>	<u>                    </u>
Cu <u>                    </u>	<u>                    </u>	<u>                    </u>	Other <u>                    </u>	<u>                    </u>	<u>                    </u>

## Inorganic:

Total Cyanide                      Free Cyanide                       
 Other                      Other                       
 Other                      Other                     

## QUANTITY

Volume 1100 gal Per Month                      1/2 Year                      Year X  
 Drum 55 gal X Bulk

## RCRA HAZARD ASSESSMENT

Sample ID: Sperry, Computer Systems, DSD, Shepard Road Facility  
 Lab Analyzed: Xylene  
Hydrite

261.21 IGNITABILITY

Flash point 80 °F (Max. allowed 140°F)

261.22 CORROSIVITY

pH - (2 < pH < 12.5 allowed)

261.23 REACTIVITY

Acid labile cyanide -  
 Acid labile sulfide -

261.24 EP TOXICITY

Sample type: Solid - Semisolid - Liquid -  
 If liquid or semisolid, non-filterable solids = -

Note: If sample contains less than 0.5% nonfiltrable solids, the filtrate is the extract.

## Analytical Results

Values are concentrations of constituent in extract.

Constituent	Concentration, mg/l	Maximum concentration allowed, mg/l
Arsenic	<u>                    </u>	5.0
Barium	<u>                    </u>	100.0
Cadmium	<u>                    </u>	1.0
Chromium, total	<u>                    </u>	5.0
Chromium, hexavalent	<u>                    </u>	5.0
Lead	<u>                    </u>	5.0
Mercury	<u>                    </u>	0.2
Selenium	<u>                    </u>	1.0
Silver	<u>                    </u>	5.0
Endrin	<u>                    </u>	0.02
Lindane	<u>                    </u>	0.4
Methoxychlor	<u>                    </u>	10.0
Toxaphene	<u>                    </u>	0.5
2,4-D	<u>                    </u>	10.0
2,4,5-TP	<u>                    </u>	1.0

SPERRY COMPUTER SYSTEMS DSD  
Hazardous Waste Product Survey

Waste Stream Xylene  
 Process Thinner  
 DOT Name: Xylene UN# UN1307  
 DOT Class: Flammable Liquid NOS EPA Code: U239  
 Physical State 70°F: Solid            Liquid X Sludge             
 Layers None  
 % Solids: Total            8%            Dissolved             
 Specific Gravity: 0.9 Flash Point: 60°F  
 pH 6.0 BTH/# NA  
 Ash Content NA

## COMPOSITION:

## Organic Components:

PCB                                    Other Cellosolve Acetate 5-40%  
 Phenol                                    Other                                     
 Other Acetone 5-15% Other                                     
 Other Xylene 50-80% Other                                   

## Heavy Metals:

	<u>Total</u>	<u>Leachate</u>		<u>Total</u>	<u>Leachate</u>
Ag	<u>                  </u>	<u>                  </u>	Hg	<u>                  </u>	<u>                  </u>
As	<u>                  </u>	<u>                  </u>	Ni	<u>                  </u>	<u>                  </u>
Ba	<u>                  </u>	<u>                  </u>	Pb	<u>17 ppm</u>	<u>                  </u>
Cd	<u>                  </u>	<u>                  </u>	Se	<u>                  </u>	<u>                  </u>
Cr	<u>2.5 ppm</u>	<u>                  </u>	Zn	<u>180 ppm</u>	<u>                  </u>
Cu	<u>5 ppm</u>	<u>                  </u>	Other	<u>                  </u>	<u>                  </u>

## Inorganic:

Total Cyanide                                    Free Cyanide                                     
 Other                                    Other                                     
 Other                                    Other                                   

## QUANTITY

Volume 100 gal Per Month                    1/2 Year                    Year X  
 Drum 55 gal X Bulk

## RCRA HAZARD ASSESSMENT

Sample ID: Sperry, Computer Systems, DSD, Shepard Road Facility  
 Lab Analyzed: Trichloroethane  
Hydrite

261.21 IGNITABILITY

Flash point - °F (Max. allowed 140°F)

261.22 CORROSIVITY

pH - (2 < pH < 12.5 allowed)

261.23 REACTIVITY

Acid labile cyanide -  
 Acid labile sulfide -

261.24 EP TOXICITY

Sample type: Solid - Semisolid - Liquid -  
 If liquid or semisolid, non-filterable solids = -

Note: If sample contains less than 0.5% nonfilterable solids, the filtrate is the extract.

## Analytical Results

Values are concentrations of constituent in extract.

Constituent	Concentration, mg/l	Maximum concentration allowed, mg/l
Arsenic	<u>-</u>	5.0
Barium	<u>-</u>	100.0
Cadmium	<u>-</u>	1.0
Chromium, total	<u>-</u>	5.0
Chromium, hexavalent	<u>-</u>	5.0
Lead	<u>-</u>	5.0
Mercury	<u>-</u>	0.2
Selenium	<u>-</u>	1.0
Silver	<u>-</u>	5.0
Endrin	<u>-</u>	0.02
Lindane	<u>-</u>	0.4
Methoxychlor	<u>-</u>	10.0
Toxaphene	<u>-</u>	0.5
2,4-D	<u>-</u>	10.0
2,4,5-TP	<u>-</u>	1.0

SPERRY COMPUTER SYSTEMS DSD  
Hazardous Waste Product Survey

Waste Stream Trichloroethane  
 Process Stripping Developer  
 DOT Name: Trichloroethane UN# UN2831  
 DOT Class: ORM-A EPA Code: U226, F001, F002  
 Physical State 70°F: Solid            Liquid X Sludge             
 Layers None  
 % Solids: Total NA Dissolved             
 Specific Gravity: 1.3 Flash Point: > 200°F  
 pH NA BTH/# NA  
 Ash Content NA

## COMPOSITION:

## Organic Components:

PCB                                    Other Trichloroethane 60-95%  
 Phenol                                    Other                                     
 Other                                    Other                                     
 Other                                    Other                                   

## Heavy Metals:

	<u>Total</u>	<u>Leachate</u>		<u>Total</u>	<u>Leachate</u>
Ag	<u>                  </u>	<u>                  </u>	Hg	<u>                  </u>	<u>                  </u>
As	<u>                  </u>	<u>                  </u>	Ni	<u>                  </u>	<u>                  </u>
Ba	<u>                  </u>	<u>                  </u>	Pb	<u>                  </u>	<u>                  </u>
Cd	<u>                  </u>	<u>                  </u>	Se	<u>                  </u>	<u>                  </u>
Cr	<u>                  </u>	<u>                  </u>	Zn	<u>                  </u>	<u>                  </u>
Cu	<u>                  </u>	<u>                  </u>	Other	<u>                  </u>	<u>                  </u>

## Inorganic:

Total Cyanide                                    Free Cyanide                                     
 Other                                    Other                                     
 Other                                    Other                                   

## QUANTITY

Volume 50 gal. Per Month                    1/2 Year                    Year X  
 Drum 55 gal X Bulk

## RCRA HAZARD ASSESSMENT

Sample ID: Sperry, Computer Systems, DSD, Shepard Road Facility  
 Lab Analyzed: Freon  
Hydrite

261.21 IGNITABILITY

Flash point - °F (Max. allowed 140°F)

261.22 CORROSIVITY

pH - (2 ≤ pH ≤ 12.5 allowed)

261.23 REACTIVITY

Acid labile cyanide -  
 Acid labile sulfide -

261.24 EP TOXICITY

Sample type: Solid - Semisolid - Liquid -  
 If liquid or semisolid, non-filterable solids = -

Note: If sample contains less than 0.5% nonfilterable solids, the filtrate is the extract.

## Analytical Results

Values are concentrations of constituent in extract.

Constituent	Concentration, mg/l	Maximum concentration allowed, mg/l
Arsenic	-	5.0
Barium	-	100.0
Cadmium	-	1.0
Chromium, total	-	5.0
Chromium, hexavalent	-	5.0
Lead	-	5.0
Mercury	-	0.2
Selenium	-	1.0
Silver	-	5.0
Endrin	-	0.02
Lindane	-	0.4
Methoxychlor	-	10.0
Toxaphene	-	0.5
2,4-D	-	10.0
2,4,5-TP	-	1.0

SPERRY COMPUTER SYSTEMS DSD  
Hazardous Waste Product Survey

Waste Stream Trichloroethylene  
 Process Degreasing  
 DOT Name: Trichloroethylene UN# UN1701  
 DOT Class: ORM-A EPA Code: U228  
 Physical State 70°F: Solid \_\_\_\_\_ Liquid X Sludge \_\_\_\_\_  
 Layers None  
 % Solids: Total NA Dissolved \_\_\_\_\_  
 Specific Gravity: 1.25 Flash Point: > 200°F  
 pH 6.2 BTH/# NA  
 Ash Content NA

## COMPOSITION:

## Organic Components:

PCB \_\_\_\_\_ Other Trichloroethylene 60-95%  
 Phenol \_\_\_\_\_ Other Oil 10-30%  
 Other \_\_\_\_\_ Other \_\_\_\_\_  
 Other \_\_\_\_\_ Other \_\_\_\_\_

## Heavy Metals:

	<u>Total</u>	<u>Leachate</u>		<u>Total</u>	<u>Leachate</u>
Ag _____	_____	_____	Hg _____	_____	_____
As _____	_____	_____	Ni _____	_____	_____
Ba _____	_____	_____	Pb _____	<u>11 ppm</u>	_____
Cd _____	_____	_____	Se _____	_____	_____
Cr _____	<u>2.0 ppm</u>	_____	Zn _____	<u>8.1 ppm</u>	_____
Cu _____	<u>4.0 ppm</u>	_____	Other _____	_____	_____

## Inorganic:

Total Cyanide \_\_\_\_\_ Free Cyanide \_\_\_\_\_  
 Other \_\_\_\_\_ Other \_\_\_\_\_  
 Other \_\_\_\_\_ Other \_\_\_\_\_

## QUANTITY

Volume 225 gal Per Month \_\_\_\_\_ 1/2 Year \_\_\_\_\_ Year X  
 Drum 55 gal X Bulk \_\_\_\_\_

## RCRA HAZARD ASSESSMENT

Sample ID: Sperry, Computer Systems, DSD, Shepard Road Facility  
 Lab Analyzed: Methylene Chloride  
Hydrite

261.21 IGNITABILITY

Flash point - °F (Max. allowed 140°F)

261.22 CORROSIVITY

pH - (2 ≤ pH ≤ 12.5 allowed)

261.23 REACTIVITY

Acid labile cyanide -  
 Acid labile sulfide -

261.24 EP TOXICITY

Sample type: Solid - Semisolid - Liquid -  
 If liquid or semisolid, non-filterable solids = -

Note: If sample contains less than 0.5% nonfilterable solids, the filtrate is the extract.

## Analytical Results

Values are concentrations of constituent in extract.

Constituent	Concentration, mg/l	Maximum concentration allowed, mg/l
Arsenic	-	5.0
Barium	-	100.0
Cadmium	-	1.0
Chromium, total	-	5.0
Chromium, hexavalent	-	5.0
Lead	-	5.0
Mercury	-	0.2
Selenium	-	1.0
Silver	-	5.0
Endrin	-	0.02
Lindane	-	0.4
Methoxychlor	-	10.0
Toxaphene	-	0.5
2,4-D	-	10.0
2,4,5-TP	-	1.0

SPERRY COMPUTER SYSTEMS DSD  
Hazardous Waste Product Survey

Waste Stream Methylene Chloride  
 Process Stripping Restist  
 DOT Name: Methylene Chloride UN# UN1912  
 DOT Class: ORM-A EPA Code: U080, F001  
 Physical State 70°F: Solid            Liquid            X            Sludge             
 Layers None  
 % Solids: Total 12% Dissolved             
 Specific Gravity: 1.3 Flash Point: 7200°F  
 pH NA BTH/# NA  
 Ash Content NA

## COMPOSITION:

## Organic Components:

PCB                                    Other Methylene Chloride 40-80%  
 Phenol                                    Other Methanol 40-60%  
 Other                                    Other                                     
 Other                                    Other                                   

## Heavy Metals:

	<u>Total</u>	<u>Leachate</u>		<u>Total</u>	<u>Leachate</u>
Ag <u>          </u>	<u>          </u>	<u>          </u>	Hg <u>          </u>	<u>          </u>	<u>          </u>
As <u>          </u>	<u>          </u>	<u>          </u>	Ni <u>          </u>	<u>          </u>	<u>          </u>
Ba <u>          </u>	<u>          </u>	<u>          </u>	Pb <u>          </u>	<u>63 ppm</u>	<u>          </u>
Cd <u>          </u>	<u>0.4 ppm</u>	<u>          </u>	Se <u>          </u>	<u>          </u>	<u>          </u>
Cr <u>          </u>	<u>41 ppm</u>	<u>          </u>	Zn <u>          </u>	<u>8 ppm</u>	<u>          </u>
Cu <u>          </u>	<u>14 ppm</u>	<u>          </u>	Other <u>          </u>	<u>          </u>	<u>          </u>

## Inorganic:

Total Cyanide                                    Free Cyanide                                     
 Other                                    Other                                     
 Other                                    Other                                   

## QUANTITY

Volume 55 gal Per Month            1/2 Year            Year X  
 Drum 55 gal X Bulk

## RCRA HAZARD ASSESSMENT

Sample ID: Sperry, Computer Systems, DSD, Shepard Road Facility  
Polychlorinated Biphenyls NOS  
 Lab Analyzed: None

261.21 IGNITABILITY

Flash point - °F (Max. allowed 140°F)

261.22 CORROSIVITY

pH - (2 < pH < 12.5 allowed)

261.23 REACTIVITY

Acid labile cyanide -  
 Acid labile sulfide -

261.24 EP TOXICITY

Sample type: Solid - Semisolid - Liquid -  
 If liquid or semisolid, non-filterable solids = -

Note: If sample contains less than 0.5% nonfiltrable solids, the filtrate is the extract.

## Analytical Results

Values are concentrations of constituent in extract.

Constituent	Concentration, mg/l	Maximum concentration allowed, mg/l
Arsenic	-	5.0
Barium	-	100.0
Cadmium	-	1.0
Chromium, total	-	5.0
Chromium, hexavalent	-	5.0
Lead	-	5.0
Mercury	-	0.2
Selenium	-	1.0
Silver	-	5.0
Endrin	-	0.02
Lindane	-	0.4
Methoxychlor	-	10.0
Toxaphene	-	0.5
2,4-D	-	10.0
2,4,5-TP	-	1.0

SPERRY COMPUTER SYSTEMS DSD  
Hazardous Waste Product Survey

Waste Stream Polychlorinated Biphenyls Ballasts  
 Process Florescent Light Fixtures  
 DOT Name: Polychlorinated Biphenyls NOS UN# UN2315  
 DOT Class: PCB EPA Code: D000/MPCA; MNO3  
 Physical State 70°F: Solid                      Liquid X Sludge                       
 Layers > 60Z  
 % Solids: Total 100% Dissolved                       
 Specific Gravity: 500 lb/drum Flash Point: NA  
 pH NA BTH/# NA  
 Ash Content NA

## COMPOSITION:

## Organic Components:

PCB > 50 ppm Other                       
 Phenol                      Other                       
 Other                      Other                       
 Other                      Other                     

## Heavy Metals:

	<u>Total</u>	<u>Leachate</u>		<u>Total</u>	<u>Leachate</u>
Ag	<u>                    </u>	<u>                    </u>	Hg	<u>                    </u>	<u>                    </u>
As	<u>                    </u>	<u>                    </u>	Ni	<u>                    </u>	<u>                    </u>
Ba	<u>                    </u>	<u>                    </u>	Pb	<u>                    </u>	<u>                    </u>
Cd	<u>                    </u>	<u>                    </u>	Se	<u>                    </u>	<u>                    </u>
Cr	<u>                    </u>	<u>                    </u>	Zn	<u>                    </u>	<u>                    </u>
Cu	<u>                    </u>	<u>                    </u>	Other	<u>                    </u>	<u>                    </u>

## Inorganic:

Total Cyanide                      Free Cyanide                       
 Other                      Other                       
 Other                      Other                     

## QUANTITY

Volume 700 lbs. Per Month                      1/2 Year                      Year X  
 Drum 55 gal                      X                      Bulk

## RCRA HAZARD ASSESSMENT

Sample ID: Sperry, Computer Systems, DSD, Shepard Road Facility  
 Oil NOS  
 Lab Analyzed: Serco

261.21 IGNITABILITY

Flash point - °F (Max. allowed 140°F)

261.22 CORROSIVITY

pH - (2 < pH < 12.5 allowed)

261.23 REACTIVITY

Acid labile cyanide -  
 Acid labile sulfide -

261.24 EP TOXICITY

Sample type: Solid - Semisolid - Liquid X  
 If liquid or semisolid, non-filterable solids = -

Note: If sample contains less than 0.5% nonfilterable solids, the filtrate is the extract.

## Analytical Results

Values are concentrations of constituent in extract.

Constituent	Concentration, mg/l	Maximum concentration allowed, mg/l
Arsenic	70	5.0
Barium	-	100.0
Cadmium	-	1.0
Chromium, total	-	5.0
Chromium, hexavalent	-	5.0
Lead	3	5.0
Mercury	-	0.2
Selenium	-	1.0
Silver	-	5.0
Endrin	-	0.02
Lindane	-	0.4
Methoxychlor	-	10.0
Toxaphene	-	0.5
2,4-D	-	10.0
2,4,5-TP	-	1.0

SPERRY COMPUTER SYSTEMS DSD  
Hazardous Waste Product Survey

Waste Stream Oil  
 Process Pump Oil  
 DOT Name: Hazardous Waste Liquid NOS. UN# NA9189  
 DOT Class: ORM-E EPA Code: D004, D008  
 Physical State 70°F: Solid \_\_\_\_\_ Liquid X Sludge \_\_\_\_\_  
 Layers None  
 % Solids: Total NA Dissolved \_\_\_\_\_  
 Specific Gravity: 0.9 Flash Point: > 200°F  
 pH 4 BTH/# NA  
 Ash Content NA

## COMPOSITION:

## Organic Components:

PCB \_\_\_\_\_ Other Oil 90-100%  
 Phenol \_\_\_\_\_ Other \_\_\_\_\_  
 Other \_\_\_\_\_ Other \_\_\_\_\_  
 Other \_\_\_\_\_ Other \_\_\_\_\_

## Heavy Metals:

	<u>Total</u>	<u>Leachate</u>		<u>Total</u>	<u>Leachate</u>
Ag	_____	_____	Hg	_____	_____
As	<u>70 ppm</u>	_____	Ni	_____	_____
Ba	_____	_____	Pb	<u>3 ppm</u>	_____
Cd	_____	_____	Se	_____	_____
Cr	_____	_____	Zn	_____	_____
Cu	_____	_____	Other	_____	_____

## Inorganic:

Total Cyanide \_\_\_\_\_ Free Cyanide \_\_\_\_\_  
 Other \_\_\_\_\_ Other \_\_\_\_\_  
 Other \_\_\_\_\_ Other \_\_\_\_\_

## QUANTITY

Volume 400 gal Per Month \_\_\_\_\_ 1/2 Year \_\_\_\_\_ Year X  
 Drum 55 gal X Bulk \_\_\_\_\_

## RCRA HAZARD ASSESSMENT

Sample ID: Sperry, Computer Systems, DSD, Shepard Road Facility  
 Lab Analyzed: Sewer Discharge  
Sperry

261.21 IGNITABILITY

Flash point - °F (Max. allowed 140°F)

261.22 CORROSIVITY

pH - (2 < pH < 12.5 allowed)

261.23 REACTIVITY

Acid labile cyanide -  
 Acid labile sulfide -

261.24 EP TOXICITY

Sample type: Solid - Semisolid - Liquid -  
 If liquid or semisolid, non-filterable solids = -

Note: If sample contains less than 0.5% nonfiltrable solids, the filtrate is the extract.

## Analytical Results

Values are concentrations of constituent in extract.

Constituent	Concentration, mg/l	Maximum concentration allowed, mg/l
Arsenic	-	5.0
Barium	-	100.0
Cadmium	-	1.0
Chromium, total	-	5.0
Chromium, hexavalent	-	5.0
Lead	-	5.0
Mercury	-	0.2
Selenium	-	1.0
Silver	-	5.0
Endrin	-	0.02
Lindane	-	0.4
Methoxychlor	-	10.0
Toxaphene	-	0.5
2,4-D	-	10.0
2,4,5-TP	-	1.0

BLANK PAGE  
TO REPLACE  
PAGES 70&71

Table C-2 Test Methods

## Parameters and Test Method

<u>Parameters</u>	<u>Test Method</u>	<u>Reference</u>
ph	Electrometric	Test Methods for Evaluating solid waste. Physical/Chemical Methods US. EPA SW-846
EP Toxicity	EP Toxicity Test Procedure	40 CFR 261 Appendix II
Chromium	Atomic Absorption	Methods for chemical analysis of water and wastes EPA-600-/4-79/020
Lead	Atomic Absorption	Methods for chemical analysis of water and wastes EPA-600-/4-79/020
Flash point	Pensky-Martens closed Cap tester	ASTM Standard D-93-79 or D-93-80
1,1,1 Trichloroethane	GC/FID	Test Methods for Evaluating solid waste. Physical/Chemical Methods US EPA SW846
Trichloroethylene	GC/FID	Test Methods for Evaluating solid waste. Physical/Chemical Methods US EPA SW846
Trichlorotrifluorethane	GC/FID	Test Methods for Evaluating solid waste. Physical/Chemical Methods US EPA SW846
Methylene Chloride	GC/FID	Test Methods for Evaluating solid waste. Physical/Chemical Methods US EPA SW846

TABLE C-3

<u>WASTESTREAM</u>	<u>SAMPLING METHOD</u>	<u>FREQUENCY</u>
1. Chromic Acid	Grab Homogenous Liquid	Quality Control samples each 70 gal. drum. Annually for permit
2. Stripper Phenol A-20	Coliwasa	Annually for permit
3. Stripper Alkaline A-150	Coliwasa	Annually for permit
4. Metal Hydroxide Sludge	Grab	Annually for permit
5. Printed Circuit Boards	Grab	Annually for permit
6. Cyanides	Coliwasa	Each shipment
7. Alcohol	Coliwasa or Drumthief	Each shipment approximately monthly
8. Acetone	Long tube to take layered sample from top to bottom	Each shipment approximately monthly
9. Methyl Ethyl Ketone	Long tube to take layered sample from top to bottom	Each shipment approximately monthly
10. Solvents	Long tube to take layered sample from top to bottom	Each shipment approximately monthly
11. Xylene	Long tube to take layered sample from top to bottom	Each shipment approximately monthly
12. Trichloroethane	Long tube to take layered sample from top to bottom	Each shipment approximately monthly
13. Freon	Long tube to take layered sample from top to bottom	Each shipment approximately monthly

TABLE C-3 (continued)

<u>WASTESTREAM</u>	<u>SAMPLING METHOD</u>	<u>FREQUENCY</u>
14. Trichloroethylene	Long tube to take layered sample from top to bottom	Each shipment approximately monthly
15. Methylene Chloride	Long tube to take layered sample from top to bottom	Each shipment approximately monthly
16. PCB	Grab or Coliwasa	Sample as needed for each case, if known to contain PCB, do not sample
17. Ethyl Acetate	Coliwasa	Each shipment approximately monthly
18. Paint Filters	Grab	Annually for permit
19. Oil	Coliwasa	Each shipment approximately monthly
20. Lab Waste		Sample per need for each case

## SECTION D

### PROCESS INFORMATION

The information provided in this section is submitted in accordance with requirements of 40 CFR Part 122.25 (b)(1), and (2), 270.15 and 270.16. Discussed in this section is storage containers, storage areas and storage tanks. Sperry at this facility has 976 ft<sup>2</sup> of container storage space and a pretreatment system. Included are Sperry procedures for operation of the systems.

#### D-1. CONTAINERS

The maximum number of drums in storage at any given time during the operating life of the facility is not expected to exceed 16 drums. The storage areas are located in the West side of the building, see Figures D-3 and D-3A (page 97 and 97A).

Waste materials are separated into five different areas. Reclaimed solvents (RS) storage area has 12 ft<sup>2</sup> of floor space for 3 drums. Flammable solvents (FL) storage area has 16 ft<sup>2</sup> of floor space for 4 drums. Sludge (SL) storage area has 24 ft<sup>2</sup> of floor space for 6 drums. Toxic storage area (TX) for PCB's and oil is 8 ft<sup>2</sup> for 2 drums. Corrosive storage area for stripper A-20 has floor space of 4 ft<sup>2</sup> for 1 drum. All drums are stored on fiberglass grating to hold them out of any standing liquid and no full containers are stacked.

The proper DOT containers used for different waste streams is described in Appendix D-2, ECP 37002 (Pages 83). DOT regulations are followed for type of container used for each waste stream. For container management, description of containers, see Appendix D-1 and D-2, ECP 37001 and 37002 (Pages 78-87).

Appendix D-1 ECP 37001 (Pages 78) describes method of waste stream segregation and the disposal process for emptied hazardous material containers. Appendix D-2 also describes the method hazardous waste is received, labeled and logged in for proper tracking. The procedure for shipments is covered in Appendix D-3, ECP 37004 (Page 88) and D-3A, ECP 37028 (pages 88-91C). Inspection of area is covered in Section F-2.

#### D-2 PRETREATMENT SYSTEM

Appendix D-4, (page 92) and Figure D-1 (Page 95) explain how the pretreatment system works. Refer to Figure D-1 for numbers in the rest of this section. The chrome reduction (8) and neutralization (9) tanks are fiberglass. The treatment tank (21) is a metal tank lined with Koroseal (PVC). The HF reaction tanks are polypropylene with fiberglass overpack. The pumps are air operated diaphragm pumps. The compressor which supplies air to these pumps is on emergency power.

#### D-3 SECONDARY CONTAINMENT SYSTEMS DESIGN AND OPERATION

The container storage areas all have some form of containment in case of a spill. The reclaim solvent area has a floor drain which leads to a large underground storage tank which is measured on a weekly basis. The flammable storage area has a floor drain which empties into a 3' x 5' x 6' holding tank. This holding tank is measured on a weekly basis. When either tank is  $\frac{1}{2}$  full a sample is pulled. If the tank just has water in it is emptied into the sanitary sewer. The corrosive liquid storage and sludge storage drain to the primary neutralization system.

Table C-2 Test Methods

## Parameters and Test Method

<u>Parameters</u>	<u>Test Method</u>	<u>Reference</u>
ph and corrosive	Electrometric	Test Methods for Evaluating solid waste. Physical/Chemical Methods US. EPA SW-846
EP Toxicity	EP Toxicity Test Procedure	40 CFR 261 Appendix II
Chromium	Atomic Absorption	Methods for chemical analysis of water and wastes EPA-600-/4-79/020
Lead	Atomic Absorption	Methods for chemical analysis of water and wastes EPA-600-/4-79/020
Arsenic	Atomic Absorption	Methods for chemical analysis of water and wastes EPA-600-/4-79/020
Flash point	Pensky-Martens closed Cap tester	ASTM Standard D-93-79 or D-93-80
1,1,1 Trichloroethane	GC/FID	Test Methods for Evaluating solid waste. Physical/Chemical Methods US EPA SW846
Trichloroethylene	GC/FID	Test Methods for Evaluating solid waste. Physical/Chemical Methods US EPA SW846
Trichlorotrifluorethane	GC/FID	Test Methods for Evaluating solid waste. Physical/Chemical Methods US EPA SW846
Methylene Chloride	GC/FID	Test Methods for Evaluating solid waste. Physical/Chemical Methods US EPA SW846

TABLE C-3

<u>WASTESTREAM</u>	<u>SAMPLING METHOD</u>	<u>FREQUENCY</u>
1. Chromic Acid	Grab Homogenous Liquid	Quality Control samples each 70 gal. drum. Annually for permit
2. Stripper Phenol A-20	Coliwasa	Annually for permit
3. Stripper Alkaline A-150	Coliwasa	Annually for permit
4. Metal Hydroxide Sludge	Grab	Annually for permit
5. Printed Circuit Boards	Grab	Annually for permit
6. Cyanides	Coliwasa	Each shipment
7. Alcohol	Coliwasa or Drumthief	Each shipment approximately monthly
8. Acetone	Long tube to take layered sample from top to bottom	Each shipment approximately monthly
9. Methyl Ethyl Ketone	Long tube to take layered sample from top to bottom	Each shipment approximately monthly
10. Solvents	Long tube to take layered sample from top to bottom	Each shipment approximately monthly
11. Xylene	Long tube to take layered sample from top to bottom	Each shipment approximately monthly
12. Trichloroethane	Long tube to take layered sample from top to bottom	Each shipment approximately monthly
13. Freon	Long tube to take layered sample from top to bottom	Each shipment approximately monthly

TABLE C-3 (continued)

<u>WASTESTREAM</u>	<u>SAMPLING METHOD</u>	<u>FREQUENCY</u>
14. Trichloroethylene	Long tube to take layered sample from top to bottom	Each shipment approximately monthly
15. Methylene Chloride	Long tube to take layered sample from top to bottom	Each shipment approximately monthly
16. PCB	Grab or Coliwasa	Sample as needed for each case, if known to contain PCB, do not sample
17. Ethyl Acetate	Coliwasa	Each shipment approximately monthly
18. Paint Filters	Grab	Annually for permit
19. Oil	Coliwasa	Each shipment approximately monthly
20. Lab Waste		Sample per need for each case
21. Copper Crystals	Grab	Annually for permit
22. Paint Thinner	Coliwasa	Each shipment approximately monthly
23. Flammable Liquid NOS (Photo Resist)	Coliwasa	Each shipment approximately monthly
24. Combustible Liquid	Coliwasa	Each shipment approximately monthly
25. Flammable Liquid NOS (Ignitable Liquid, Bulk)	Coliwasa	Each shipment approximately quarterly
26. Oil Filters	Grab	Annually for permit



ECP	37001	REV	E
PAGE		2	OF 4

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION Hazardous Waste Disposal Procedure		REF CFR40, CFR49
ENGINEER D. E. MacDonald	DATE	APPROVAL <i>[Signature]</i> DATE 10/4/84

- 4.3 If an appropriate drain is not available put the waste in an approved container. Call Environmental Management or consult the HMDF, MAPPER files to determine the appropriate waste container.
- 4.4 Environmental Management will provide an approved container or will provide the necessary information to obtain the proper container.
- 4.5 The person filling the container must fill out a Hazardous Waste label (UDI-2744).
- 4.6 Provide the information requested on the label, including: contents, department, organization number, prepared by, extension, and the date before starting to fill the container. Use the proper generic name from appendix I when filling out the label.
- 4.7 Wear proper protective clothing and eye protection when dispensing hazardous waste into a container.
- 4.8 Do not overfill, provide expansion room in the container.
- 4.9 When the container is full, the Hazardous Waste Coordinator for the department signs and dates the Hazardous Waste label for the final disposition. This certifies the contents of the container is correctly identified.
- 4.10 After the Hazardous Waste label is signed, contact the move crew to move it to the Environmental Management storage area. The move crew will not move any waste container unless a Hazardous Waste label is attached and completely filled out.
- 5.0 Disposal Procedure for Each Category of Waste
- 5.1 Acids, caustics and other non-solvent type chemicals.
- 5.1.1 These wastes are treated by the facility's pretreatment system.
- 5.2 Hydrofluoric acid and other fluoride chemicals.
- 5.3 Chromic acid and other chrome containing chemicals.
- 5.3.1 Concentrated chrome wastes are properly disposed of in bulk by an approved outside vendor.
- 5.3.2 Chrome containing rinse waters are treated by the facility's pre-treatment system.
- 5.4 Cyanide containing chemicals.
- 5.4.1 Cyanide containing chemicals must not be dumped down any drain.

The proper DOT containers used for different waste streams is described in Appendix D-2, ECP 37002 (Pages 87). DOT regulations are followed for type of container used for each waste stream. For container management, description of containers, see Appendix D-1 and D-2, ECP 37001 and 37002 (Pages 82).

Appendix D-1 ECP 37001 (Pages 82) describes method of waste stream segregation and the disposal process for emptied hazardous material containers. Appendix D-2 also describes the method hazardous waste is received, labeled and logged in for proper tracking. The manifest procedure is covered in Appendix D-2A, ECP 37028 (page 91A). The procedure for shipments is covered in Appendix D-3, ECP 37004 (Page 92). Inspection of area is covered in Section F-2.

#### D-2. TANKS

##### Description of Chromic Tank

This facility has one 5,000 gallon tank for holding spent chromic acid etchant. The tank was built by Owens/Corning Fiberglass. Drawing number A2107 (Figure D-2) (Page 98), gives dimensions and materials used for construction. The maximum specified pressure this tank can handle is 4.4 psi plus another additional 0.35 psi. This tank was recoated inside with Hetron 197 and glass once because of cracks in the sidewalls due to moving the tank. The manufacturer of the tank claims there is no corrosion rates published for this material because it does not corrode. Manufacturer's rated life of this tank is at least 20 years. Figures D-3 and D-4 (Pages 106 & 107) show piping for the chromic tank. The dumped waste is Pumped from the waste treatment pit to the tank. When the tank is filled, a disposal company comes in with a tank truck to haul the waste to their approved facility for neutralization, fixation and disposal. There is a level sensor in the tank with



ECP	37001	REV	E
PAGE	4	OF	4

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION  
Hazardous Waste Disposal Procedure

REF  
CFR40, CFR49

ENGINEER  
D. E. MacDonald

DATE

APPROVAL

*[Signature]*

DATE

10/4/84

5.9 Non chlorinated or fluorinated solvents and oils unreclaimable are incinerated by an approved vendor.

5.10 Waste chemicals are returned to the original vendor for proper disposal.

### 6.0 Procedure for Disposal of Emptied Hazardous Material Containers.

6.1 All drums and containers with deposits on them are returned to the original vendor for reconditioning and reuse. If over one inch of product is left in the container, it will be returned to using department for complete emptying.

6.2 Rinse and drain the containers of all products with disposal method 1, 2, and 3, that do not have a deposit on them, into an appropriate drain. The container may then be disposed of with the sanitary trash.

6.3 Send all containers that hold a cyanide product to Environmental Management for disposal.

6.4 Containers for products with a disposal method of 5 are returned to vendor if there is a deposit on them. If there is no deposit, container can be used for waste of the same products. Otherwise, drums may be completely emptied and thrown in dumpster.

6.5 Any container of a product with disposal code 7 must be checked to see if it has any reclaim value. Notify Environmental Management for disposition.

6.6 Any container of a product with disposal method of 6, 8 or 9 may have to be triple rinsed per regulations to consider the container as being non hazardous. Consult with Environmental Management to determine the type of rinsing necessary.

APPENDIX D-2  
WASTE CHEMICAL DOCK PROCEDURE

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION Waste Chemical Dock Procedure		REF	
ENGINEER W.M. Polta <i>William M. Polta</i>	DATE 11/10/83	APPROVAL <i>Dan MacDonald</i>	DATE 12/5/83

### 1.0 Purpose

- 1.1 This procedure is to outline the method in which empty waste containers are requisitioned and dispensed; the method for receiving waste chemicals from the using departments; and preparation of the waste material to be shipped to outside contractors.

### 2.0 Container Supply

#### 2.1 DOT Barrels - 17E

- 2.1.1 When the supply of DOT-17E is down 15 order more.\*

#### 2.2 DOT Barrels - 6D or 37M

- 2.2.1 When the supply of DOT-6D barrels are down to 15 order more.\*

#### 2.3 DOT Barrels - 17H

- 2.3.1 When supply of DOT - 17H is down to 15 order more.

#### 2.4 Dispensing Containers

- 2.4.1 All barrels are dispensed by Environmental personnel (ext. 4714 & 4656-SR; pager 13 or 24).
- 2.4.2 Determine the type and amount of the waste chemical and provide the appropriate container type. Consult the hazardous material data file mode type B or the DOT manual (CFR-49) for the correct type of container to use.
- 2.4.3 Insure that all barrels being shipped out are a minimum of 3/4 full, but be cautious not to overfill.
- 2.4.4 Safety cans are requisitioned by each using department from the tool supply crib.
- 2.4.5 Attach a plate to waste chemical safety cans for hazardous waste chemical labels.

### 3.0 Receiving Waste Chemicals

- 3.1 Move Crew personnel only, will move waste chemicals to the waste chemical dock. Containers of waste chemicals will only be moved if a Hazardous Waste Chemical label (UDI-2744) is completely filled out as per ECP37001.
- 3.2 The waste chemicals are moved to the chemical staging area at Shepard Road to be logged in, labeled and separated by Environmental personnel into appropriate disposal categories.

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION Waste Chemical Dock Procedure		REF	
ENGINEER W.M. Polta	DATE 11/10/83	APPROVAL	DATE

3.2.1 All waste containers must be logged in using Waste Chemical Dock Log.

1. The serial numbers from Hazardous Waste Chemical labels must be entered in slot A.
2. The date container reaches dock must be entered in column B.
3. The quantity of containers in gallons must be entered in column C.
4. The descriptions of waste chemicals, generic or proper DOT name and any other identifying information must be entered in column D.
5. The generating department numbers must be entered in column E.
6. If waste is being received from UP or Midway enter manifest number or HWT serial number in column F.
7. Make an determination of what area container will be stored in from step 3.4 and enter abbreviation in column G.
8. Make an determination on a method of disposal from step 3.4 and enter number of disposal method in column H.
9. When waste chemical is properly disposed as per step 3.4 enter date in column I. This will require completing manifest for waste chemicals from UP and Midway. Follow step 3.3 from this procedure.

3.2.2 When waste chemicals are received from UP or Midway a Hazardous Waste manifest must be sent with container and must be completed correctly.

1. Check manifest to see that generator and transporter information is filled out correctly (see Appendix III).
2. Check manifest to see that all information is filled out correctly for hazardous waste facility. (see Appendix III & IV).
3. When the waste is received, date and sign manifest in slots 31, 32 and 33.
4. Send all copies to Environmental Managers' secretary except gold and white copy.
5. When waste is properly disposed of date and sign slots 34, 35 and 36.
6. File gold copy for our files.
7. Mail white copy to generator at address (4).

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION Waste Chemical Dock Procedure		REF	
ENGINEER W.M. Polta	DATE 11/10/83	APPROVAL	DATE

3.3 All containers must be labeled correctly upon storage as per step 3.4 on dock after being logged in.

3.3.1 The Sperry Hazardous Waste Chemical label (UDI-2744) must be on container completely filled out as per ECP37001.

3.3.2 The DOT label needs to be attached to container. This label must include contents, shipper and address.

3.3.3 Attach the EPA label with generator name, address and manifest number information filled out.

3.3.4 Place DOT hazard class label on drum as per required by CFR 49 or hazardous material data file.

3.4 Waste Chemicals will be separated into the different categories per ECP-37001.

3.4.1 Acids, caustic should be pumped into the concentrated acid-alkali holding tank. They will be stored in staging area untill disposed of (see Appendix V).

3.4.2 Hydrofluoric acid and other fluoride containing chemicals should be pumped into the hydrofluoric acid drain for neutralization. They will be stored on chemical shipping dock (CD) untill disposed of (see Appendix V).

3.4.3 Pump chromic acid and other chrome containing chemicals into the chromic holding tank. They will be stored in staging area untill disposed of (see Appendix V).

3.4.4 Cyanide containing chemicals.

1. Cyanide is stored and shipped in 55 gallon, DOT-37M drum.
2. Drums are stored on dock (TX) area as per Appendix V untill drum is properly disposed of.

3.4.5 Reclaimable Solvents

1. Small quantities from safety cans should be poured into the appropriate barrel in flammable room (FL) or non-flammable reclaimable solvent storage area (RS) as per Appendix V.
2. Full drums will be stored on dock in flammable room (FL) or non-flammable reclaimable solvent storage area (RS) as per Appendix V.

3.4.6 Solvents for disposal (non-reclaimable)

1. Small quantities should be dispensed from the safety cans into the appropriate barrel in non-reclaimable storage area (NS) as per Appendix V to await shipping.
2. Full barrels are placed on dock area for non-reclaimable storage (NS) as per Appendix V to await shipping.

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION Waste Chemical Dock Procedure		REF	
ENGINEER W.M. Polta	DATE 11/10/83	APPROVAL	DATE

3.4.7 Chemicals with reclaim value.

1. Photo chemicals containing silver (HYPO) should be separated and poured into the silver plate holding tank. The reclaimed silver is turned over to Property Accounting.
2. All other reclaimable chemicals are sent to Property Accounting - Midway, MS. M1F32.

3.4.8 Metal Hydroxide sludges.

1. Full barrels should be separated to sludge storage area (SL) to await shipping.

4.0 Shipping Chemicals To Outside Vendors

4.1 Bulk Waste Chemicals

4.1.1 The waste chemical contractor requires at least 48 hours notification before a tank truck will be available. Call the contractor 48 hours prior to the time the holding tank will have 4800 gallons in it. This is necessary to prevent the holding tank from overflowing or the use of drums as temporary holding for the waste chemical.\*

4.1.2 Assist in loading the material. Insure that someone is always at the truck in the event of an accidental spill.

4.1.3 Have paperwork completed before shipment. If correct, sign and date it. If the information is not correct, it must be corrected before signing the certification. Fill out Hazardous waste manifests using information in Appendix III, IV and on permits.

4.2 Waste Chemicals in Barrels

4.2.1 Reclaimable solvents

1. Call the appropriate vendor for a pick-up when (78) drums of solvents are ready for shipment. Indicate the number and type of solvents to dispatcher at time of ordering pick-up.
2. Have Hazardous Material Manifest completed when the truck comes in for a pick-up. Use Appendix III, IV, and permits for waste to fill out forms correctly.
3. Record serial numbers and contents of drum from waste label of each drum shipped.

4.2.2 Non reclaimable chemicals.

1. Call the appropriate vendor for a pick-up when 2 dumpsters are ready for shipment.\*
2. Have Hazardous Material Manifest completed when the truck comes in for a pick-up. Use Appendix IV, V and permits for waste to fill out forms correctly.

\*NOTE: See attached sheet for information relating to the current vendor.

APPENDIX D-3

INTERPLANT - PRIVATE HAULER HAZARDOUS MATERIAL

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION Interplant & Private Hauler Hazardous Material Handling		REF CFR49; MPCA-6 MCAR 4.9001
ENGINEER <i>D.E. MacDonald</i> D.E. MacDonald	DATE <i>1/18/82</i>	APPROVAL <i>[Signature]</i> DATE <i>2/3/82</i>

### 1.0 PURPOSE

- 1.1 This procedure is to ensure that all hazardous materials are correctly labeled, identified, and packaged for safe shipping. This includes the shipment of new chemicals and waste chemicals which are classified as hazardous.

Note: A designated hazardous material truck will move all hazardous materials between Univac DSD plants. A hazardous materials dock coordinator from the Environmental Management group will dispatch and approve all shipments. The truck driver for this truck will receive training in shipment of hazardous materials.

### 2.0 IDENTIFICATION OF HAZARDOUS MATERIALS

Consult the Department of Transportation Manual; Univac Hazardous Material handbook; or the hazardous material data file (HMDF) to determine if the material to be shipped is classified as hazardous.

### 3.0 SHIPPING PROCEDURE

- 3.1 Complete the Hazardous Material Transfer, UDI-3833, for the material to be shipped. (Only hazardous material can be listed.)
- 3.1.1 Enter the date the material is being shipped.
  - 3.1.2 Complete the required information for the originator and receiver. If the originating or receiving address is other than those listed, write in the correct address.
  - 3.1.3 Itemize each type of hazardous material.
    - 3.1.3.1 List the quantity for each chemical. Include the unit of measure.
    - 3.1.3.2 Under description, enter the generic name of the chemical and then the trade name. Both must be included if the chemical has a trade name.
    - 3.1.3.3 Consult the CFR 49 or HMDF for the correct hazard class and hazard label for each chemical. Enter the information in the appropriate column for each chemical being shipped.
    - 3.1.3.4 List the total weight of each type of chemical. If the weight is unknown for the material, enter an estimated weight.

**ENVIRONMENTAL CONTROL PROCEDURE**

DETAIL DESCRIPTION		REF	
ENGINEER	DATE	APPROVAL	DATE

3.1.3.5 Include the Univac stock number if desired.

3.1.4 Determine the appropriate placard needed for display on the outside of the truck. Consult the Department of Transportation manual or someone from the Environmental Control Group. Place a check in the appropriate box on the Hazardous Material Transfer indicating the placard needed.

3.1.5 Inspect each container being shipped.

3.1.5.1 Ensure that each container is the appropriate one for the contents. Consult the DOT manual CFR 49 or the HMDF for information on the correct container to use.

3.1.5.2 Make sure each container has the appropriate hazard label attached to it.  
Note: Labels are available from the Environmental Control Group or the Shipping Department.

3.1.5.3 Each container must have the generic chemical name on or attached to it.

3.1.6 The originator signs the form in the releasing space on the form and includes the date.

3.2 Certification Procedure

3.2.1 Only the hazardous dock coordinator or his representative who is authorized to certify shipments or hazardous material may sign the certification statement on the Hazardous Material Transfer and give approval for making the shipment.

3.2.2 Before signing the certification statement on the form, the hazardous dock coordinator must determine if the form is filled out properly. He must verify that the containers are properly labeled, described, classified, packaged, marked and are in proper condition for shipping.

3.2.3 If everything is in order, sign the space under the certification statement and also the approval block. Include the date of shipping.

3.3 Before the material is loaded into the truck, the move crew personnel or others responsible for loading the truck must inform the driver that hazardous material is being loaded onto the vehicle. He must acknowledge this by signing the Hazardous Material Transfer form in the block marked carrier. Include the current date.

3.4 Distribution of the Hazardous Material Transfer copies

3.4.1 The driver must have the white copy of the form in the cab of the truck while the hazardous material is in the truck. When the material is

**ENVIRONMENTAL CONTROL PROCEDURE**

DETAIL DESCRIPTION

REF

ENGINEER

DATE

APPROVAL

DATE

- removed from the truck, the white copy of the form also must be removed.
- 3.4.2 The yellow copy of the form is sent to the Environmental Control Group at mail station U1N14. This form must be filed for a period of three years per government regulations.
- 3.4.3 The pink copy must be attached to one of the containers so the material is delivered to the proper location.
- 3.4.4 The goldenrod copy is kept by the originator.
- 3.5 Placarding the Truck
- 3.5.1 The truck driver must display the placard listed on the Hazardous Material Transfer.
- Note: If there is a shipment being made by more than one originator and if different placards are indicated on the Hazardous Material Transfer forms, the Environmental Control Group can assist in determining the appropriate placard required.
- 3.5.2 When the hazardous material is removed from the truck, the placards must be removed from the truck.

APPENDIX D-3a  
MANIFEST FILING PROCEDURE



ECP	37028	REV	B
PAGE	1	OF	3

## ENVIRONMENTAL CONTROL PROCEDURE

### DETAIL DESCRIPTION

Manifest Filing Procedure - Disk L-ac-2

### REF

### ENGINEER

*Don MacDonald*

### DATE

*10/4/84*

### APPROVAL

*[Signature] Martin*

### DATE

*10/4/84*

### 1.0 General

- 1.1 Following procedure will be used to insure that each copy of the waste manifest gets to the proper location for filing or other action required.
- 1.2 The procedure will cover waste shipped from the Mendota heights Reconditioning Center (MHRC), Semiconductor Operation (SCO), Midway, Sperry Park and Shepard Road.

### 2.0 Specific Procedure

#### 2.1 MHRC and SCO

- 2.1.1 Personnel at MHRC and SCO will coordinate with Environmental Management that waste is ready for pick up.
- 2.1.2 MHRC and SCO will complete the manifest prior to shipping and waste.
- 2.1.3 The Environmental Management truck driver will check the drums, etc., and sign the manifest if everything is in order.
- 2.1.4 Distribution of the manifest copies
  1. MHRC or SCO personnel will keep the copy 1 and 2 of the manifest after the truck driver signs the document.
  2. MHRC or SCO personnel keep copy 2 and sends the copy 1 to the State of Minnesota.
  3. The remaining copies are sent with the truck driver to Shepard Road.
  4. When the waste arrives at Shepard Road, Environmental Management personnel will sign the manifest and will enter the pertinent information into MAPPER.
  5. The truck drivers will keep the copy 6.
  6. Shepard Road retains copy 4 and send copies 3 and 5 to Sperry Park (within 2 days of receipt).
  7. The copy 5 must be sent to MHRC or SCO within 2 days to notify them we received the waste.



ECP	37028	REV	B
PAGE	2	OF	3

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION

Manifest Filing Procedure

REF

ENGINEER

DATE

APPROVAL

DATE

10/4/84

8. The copy 3 must be sent to the State of Minnesota to inform them that the waste has been received for processing (treatment or shipment to outside disposal from).

### 2.2 Sperry Park and Midway

- 2.2.1 Environmental Management personnel will complete the information required on the manifest.
- 2.2.2 The truck driver signs the manifest before leaving the plant with the waste. The copies 1 and 2 stay at S.P.
- 2.2.3 The copy 2 is filed at S.P. The copy 1 is sent to the State of Minnesota.
- 2.2.4 The waste is received at S.R., the manifest is signed and the required information is entered into MAPPER.
- 2.2.5 The truck driver will keep the copy 6.
- 2.2.6 The signed copies 3 and 5 are sent to the S.P. within 2 days of receiving waste.
- 2.2.7 The Copy 4 stays at S.R.
- 2.2.8 Copy 5 is filed at SP.
- 2.2.9 Copy 3 is sent to the State of Minnesota.

### 2.3 Shepard Raod

- 2.3.1 Environmental Management personnel will complete the information required on the manifest if more than one state is involved.
- 2.3.2 Insure that the vendors truck driver signs the manifest before he leaves the facility.
- 2.3.3 Keep the appropriate copies from each. (Make xerox copy for S.R. files)
- 2.3.4 Send the copies to S.P. so the appropriate copies can be sent to the state agencies and the remaining copies can be filed.
- 2.3.5 Enter the appropriate information into MAPPER.

#### NOTE:

- o Use a duplicate line entry with a zero quantity if 2 different state manifests are used.



ECP	37028	REV	B
PAGE	3	OF	3

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION

Manifest Filing Procedure

REF

ENGINEER

DATE

APPROVAL

DATE

10/4/84

- o The final destination state should be entered on the first line.

2.3.6 After the waste arrives at the final destination, notification copies should be sent to us from the disposal facility.

2.3.7 File these copies at S.P. with the original copies.

2.3.8 Enter the appropriate information into MAPPER.

**APPENDIX D-4**  
**WASTE TREATMENT**

# WASTE TREATMENT SYSTEM

## SPERRY PARK

5 March 1984

### 1.0 General

The waste treatment system for Sperry, Sperry Park Facility, is for the purpose of treating the various concentrated chemicals and rinse waters used in the research laboratories in the processing of Semi-conductor and other electronic components. This system also includes fume scrubbers used to remove fume contaminants from the air exhausted to the atmosphere. This waste treatment system is housed in a building constructed specifically for this equipment.

Note: This process is written in conjunction with the prints, Sperry Park Facilities, Waste Treatment System; Bipolar Deionizing System; MOS/Photo Mask and M&P Deionizing System; and Fume Scrubber System; dated September 1979, and February 1984.

### 2.0 Scope

- 2.1 The waste treatment systems at Sperry Park consists of deionizing systems for removing contaminants from the rinse water from the Bipolar, MOS, and Photo Mask Semi-Conductor laboratories and the M&P electroplating laboratory.
- 2.2 The products from regenerating the deionizers is collected in holding tanks for further processing in the neutralization system.
- 2.3 The fume scrubbers remove air contaminants from the exhaust of the Bipolar, MOS, Photo Mask, and M&P laboratories. Included in the exhaust are fumes from various acids, caustics, and electroplating solutions. The water used for absorbing the contaminants in the scrubbers is collected in the holding tanks for further processing in the neutralization system.
- 2.4 The Neutralization Systems are operated on a continuous basis. The underground holding tanks collect waste liquid from the semiconductor deionizing systems, fume scrubbers and acid wastes from various laboratories. This waste is then pH adjusted and discharged. Metal containing wastes from plating deionizers, fume scrubbers and plating lab drains are pumped into a separate system where the metal wastes are neutralized and introduced into a clarifier for solids separation. Waste hydrofluoric acid is collected separately and batch treated.

### 3.0 Specific requirements

- 3.1 The acid waste system is operated on a continuous flow basis at 50 gpm
- 3.2 The chrome reduction and heavy metal precipitation system is operated on a continuous flow basis at 20 gpm.
- 3.3 The hydrofluoric acid is treated in batches of 300 gal.
- 3.4 The neutralized solutions are pumped through the clarifier at a rate not exceeding 30 gallons per minute.
- 3.5 The fume scrubbers exhaust a total of 90,000 cfm at an efficiency rating of 90% contaminant removal.
- 3.6 The system is designed to correct waste discharge rules for the Metropolitan Disposal System 6 M.C.A.R. 6.010-6019.

### 4.0 System Components

#### 4.1 Fume Scrubber System

Note: Use print marked Sperry Park Facility, Fume Scrubber System, September 1979

- 4.1.1 Heil Process Equipment Company, Model HCL-42 fume scrubber (Scrubber (P))
  - 1. 30,000 cfm
  - 2. Permit application submitted to the Minnesota Pollution Control Agency on 13 March 1979.
- 4.1.2 Ceilcote Company, Model HPR-180 fume scrubber (scrubber (5))
  - 1. 18,000 cfm
  - 2. MPCA Permit #1104-76-0-2
- 4.1.3 Ceilcote Company, Model HAW 1012 fume scrubber (scrubber (3))
  - 1. 12,000 cfm
  - 2. MPCA Permit #1104-76-0-2
- 4.1.4 Ceilcote Company, Model HAW 2830 fume scrubber (scrubber (4))
  - 1. 30,000 cfm
  - 2. MPCA #1104-76-0-2

#### 4.2 MOS/PM and M&P Deionizing System

Note: Use print marked Sperry Park Facility, MOS/PM and M&P Deionizing System, dated September 1979.

4.2 MOS/PM and M&P Deionizing System (Cont.)

- 4.2.1 Storage tank (#1)
  - 1. Fiberglass reinforced plastic
  - 2. 1,200 gallons capacity
- 4.2.2 Centrifugal pumps (#2)
  - 1. (6) Goulds Pumps, Model 3196
- 4.2.3 Ultra-violet sterilizer (#3)
  - 1. (5) Aquafine Company, Model CSL-4
- 4.2.4 Cartridge filters (#4)
  - 1. (4) Pall Trinity Company, Model MES 1009 filter assemblies
- 4.2.5 Two-bed deionizers (#5)
  - 1. (6) Illinois Water Treatment Company, Model HBE 785, two bed deionizer
  - 2. Capacity - 17 gpm each
- 4.2.6 Mixed bed deionizers (#6)
  - 1. (4) Illinois Water Treatment Company, Model MB-885, mixed bed deionizers
  - 2. Capacity - 17 gpm each
- 4.2.7 Storage tank (#7)
  - 1. (2) Nalgene Polyethylene, Model 24100
  - 2. Capacity - 500 gallons each
- 4.2.8 Sand filter (#8)
  - 1. Illinois Water Treatment Company, Model Duafilt DF-230, sand filter
  - 2. Capacity - 17 gpm
- 4.2.9 Carbon filter (#9)
  - 1. Illinois Waste Treatment Company, Model CM-242, carbon filter
  - 2. Capacity - 17 gpm

4.3 Bipolar Deionizing System

Note: Use print marked Sperry Park Facility; Waste Treatment System dated September 1979.

- 4.3.1 Storage tanks (#1)
  - 1. (2) Owens Corning, Fiberglass Reinforced Plastic, Model 810 MUG, underground storage tanks
  - 2. 8' diameter x 31'
  - 3. Capacity - 10,000 gallons each
- 4.3.2 Centrifugal pumps (#2)
  - 1. (4) Goulds pumps, Model 3196

#### 4.3 Bipolar Deionizing System (Cont.)

##### 4.3.3 Two bed deionizers (#3)

1. (2) Illinois Water Treatment Company, Model ASB-3636 two bed deionizers.
2. Capacity - 50 gpm each

##### 4.3.4 Mixed bed deionizers (#4)

1. (2) Illinois Water Treatment Company, Model MB-3096, mixed bed deionizers
2. Capacity - 50 gpm each

##### 4.3.5 Ultra-violet sterilizers (#5)

1. (3) Aquafine Company, Model CSL-4 ultra-violet sterilizers.

##### 4.3.6 Cartridge filters (#6)

1. (3) Poll Trinity Company, Model MES 1009 BP 32, filter assemblies

##### 4.3.7 Mixed bed deionizers (#7)

1. Illinois Water Treatment Company, Model 3696, mixed bed deionizers.
2. Capacity - 70 gpm

#### 4.4 Waste Treatment System

Note: Use print marked Sperry Park Facility, Waste Treatment Facility, dated February 1984.

##### 4.4.1 Hydrofluoric Acid Neutralization System

###### 4.4.1.1 Control Panel (#1)

1. Leeds and Northrup pH electrode assembly, model 7773-1-6-222-000
2. Leeds and Northrup pH receiver controller, model 7075-3-147

###### 4.4.1.2 Storage Tanks (#2)

1. (2) Raven Company, Polyethylene lined fiberglass reinforced plastic underground tanks - 500 gal. each

###### 4.4.1.3 Reaction Tank (#3)

1. Nalgene polyethylene tanks with fiberglass encasement, Model 17100 and tank stand, Model 17009

###### 4.4.1.4 Mixer (#4)

1. (2) Lightnin, Model ND-1 Portable Mixer, 1/3 HP TEFC Motor

###### 4.4.1.5 Air Diaphragm Pump (#5)

1. (1) American Pump Co. 1" cast polypropylene air diaphragm pump model "Brute" - Teflon moving parts

###### 4.4.1.6 Air Diaphragm Pump (#6)

1. Warren Rupp, Model SB1 $\frac{1}{2}$ -A sandpiper, air diaphragm pump

###### 4.4.1.7 Reagent Tank (#7)

1. Nalgene, Polypropylene tank with stand 150 gal.

4.4.2 Waste Chrome Reduction and Heavy Metal Precipitation System.

4.4.2.1 Reaction (8) & (9)

1. (2) Plas Tank Ind., fiberglass reinforced plastic - 5,000 gal.

4.4.2.2 Mixer (10)

1. (2) Lightnin, Model NLDG-200 fixed mount mixer w/2hp TSFC motor

4.4.2.3 Control Panel (11)

1. (2) Leeds and Northrup, pH electrode assembly, Model 773-1-7-22-2-000
2. Leeds and Northrup, ORP electrode assembly, Model 7773-1-7-26-1-000
3. (2) Leeds and Northrup, pH receiver/controller, Model 7075-3-147
4. Leeds and Northrup, ORP receiver/controller, Model 7075-4-100

4.4.2.4 Bellows Pump (12)

1. (3) Cole Parmer Teflon Air Bellows Pumps Model 7152

4.4.2.5 Chemical Storage Tanks (13), (14), & (15)

1. (3) Nalgene, polyethylene tank with fiberglass encasement with stand, 150 gal.

4.4.2.6 Air Diaphragm Pump #16

1. Warren Rupp, Model ST1½-A, VIP Sandpiper, air diaphragm pump

4.4.2.7 Clarifier (17)

1. Haviland Products Company, inclined plate clarifier capacity - 30 gpm

4.4.2.8 Filter (18)

1. Haviland Products Company Model HPC-2, 2 cu. ft.

4.4.2.9 Mixer #4

1. (1) Lightnin, Model ND-1 Portable Mixer, 1/3 HP TEFC Motor

4.4.3 Waste Acid Neutralization System

4.4.3.1 Chemical Storage Tank #19

1. (2) Owens Corning, Fiberglass reinforced plastic Model 810 MUG underground storage tanks, 8' x 31' - 10,000 gal.

4.4.3.2 Air Diaphragm Pump (20)

1. (2) Warren Rupp, Model SB2-A, Sandpiper, air diaphragm pump

4.4.3.3 Reaction Tank (21)

1. Haviland Equipment Co. Compartmented Treatment Tank 4'x4'x8', PVC lined w/fiberglass coated exterior

4.4.3.4 Mixers (4)

1. (2) Lightnin, Model ND-1 Portable Mixer, 1/3 HP TEFC Motor

4.4.3 Waste Acid Neutralization System (Cont.)

4.4.3.5 Control Panel (22)

1. (2) Leeds and Northrup, pH electrode Assembly, Model 7773-1-7-22-2-000
2. (2) Leeds and Northrup, pH receiver/controller, Model 7075-3-147

4.4.3.6 Caustic Bulk Storage Tank #23

1. Justin Company, Fiberglass Reinforced Plastic Tank - 1,200 gal.

5.0 Process Description

5.1 Fume Scrubber System

The fumes from chemicals used in the various laboratories and exhausted through one of the fume scrubbers shown on the print marked Sperry Park Facility, Fume scrubber System, dated September 1979. Three of these scrubbers have been permitted by the Minnesota Pollution Control Agency as indicated on the print. As application for permit was submitted on 13 March 1979 for the scrubber marked (P) on the print.

The water used for scrubbing the contaminants from the exhausted air is collected in one of the 10,000 gallon tanks (Item #7) on the print Sperry Park Facility, Waste Treatment System dated February 1984.

5.2 MOS/PM and M&P Deionizing Systems

5.2.1 MOS/PM Deionizing System

Water used for rinsing chemicals used in the fabrication of electronic semi-conductors and photographic masks used in producing semi-conductors is collected in a 1200 gallon storage tank #1 and a 500 gallon storage tank #7.

The contaminated solution from these tanks are pumped #2 through an ultraviolet sterilizer #3 and a cartridge filter #4 into the four 2-bed deionizers #5.

The water flows out of the two-bed deionizers through an ultraviolet sterilizer and cartridge filter through four mixed bed deionizers #6 and continues through an ultraviolet sterilizer and cartridge filter. At this point the chemical contaminants have been removed from the rinse water and concentrated in the deionizers.

When the exchange capacity of the deionizers is reached, they are regenerated with hydrochloric acid and sodium hydroxide to restore the ion exchange capacity of the deionizers. The regenerate chemicals and contaminants are collected in the 10,000 gallon storage tanks #7 shown on the Waste Treatment System Print.

### 5.2.1 MOS/PM Deionizing System (Cont.)

The M&P regenerant chemicals and contaminants are collected in tank #8 of the Heavy Metal Precipitation System.

### 5.2.2 M&P Deionizing System

Water used for rinsing chemicals used in the fabrication of printed circuit boards and chemical milling of electronic parts are collected in a 500 gallon storage tank #7. This contaminated solution is pumped #2 through an ultraviolet sterilizer #3, Sand filter #8, carbon filter #9, 2 bed deionizers #5 and an ultraviolet sterilizer #3. At this point the chemical contaminants are removed and concentrated in the system. When the capacity of the 2-bed deionizers sand filter and carbon filter is reached, these units are regenerated. The deionizers are regenerated with hydrochloric acid and sodium hydroxide to restore the ion exchange capacity of the deionizers.

The regenerate chemical and contaminants from the deionizer are collected in the Waste Chemical Storage Tanks #7, shown on the Waste Treatment System Print dated February 1984.

### 5.3 Bipolar Deionizing System

The contaminated rinse water used to rinse chemicals from the semi-conductor fabricating operation is collected in the 10,000 gallon storage tank #1 for processing through the deionizing system. This solution is pumped #2 through a cartridge filter #6 and ultraviolet sterilizer #5 through dual 2-bed deionizers #3 2-mixed bed deionizers #4, another ultraviolet sterilizer #5 and cartridge filter #6.

This flows into another 10,000 gallon storage tank #1 that is pumped #2 through a final mixed bed deionizer #7, ultraviolet sterilizer #5 and cartridge filter #6.

At this point the chemical contaminants have been collected in the deionizers, the deionizers are regenerated with sodium hydroxide and hydrochloric acid to restore the ion exchange capacity and remove the contaminants. The regenerant chemicals and contaminants are collected in the waste chemical storage tank #7, shown on the Waste Treatment System print dated February 1984.

## 5.4 Waste Treatment Systems

### 5.4.1 Waste Hydrofluoric Acid Neutralization System

Waste Hydrofluoric Acid is collected from various labs in two 500 gallon underground storage tanks #2. These storage tanks have Uehling Liquid Level Sensors to indicate when they should be pumped out to be treated. The waste solution is pumped #5 into a 450 gallon reaction tank #3. This tank has a mixer, #4 to insure thorough mixing of the waste acid with the lime slurry, which is added for neutralization. The lime slurry is added from tank #7 through pump #6 until the pH reached 8.5. This is controlled by the pH sensor and receiver located in control panel #1. After the waste solution is totally neutralized, it is pumped from the reaction tank into the 5,000 gal. neutralization tank #9 on the chrome reduction and heavy metal precipitation system from there it is pumped into the clarifier #17 for separation of the solids from the liquid.

### 5.4.2 Waste Chrome Reduction and Heavy Metal Precipitation System

The heavy metal waste from the plating and etching laboratories is pumped into the chrome reduction tank #8 where immersed pH and ORP probes signal the meters on panel #11 which controls the pumps #12 which adjust the pH and the oxidation reduction potential by pumping  $\text{NaHSO}_3$  and  $\text{H}_2\text{SO}_4$  from tanks #13 and #14 to maintain a pH of 2.0-2.5 and an oxidation reduction potential of 300 mv. The mixer #10 keeps the mixture in tank #8 uniform. This tank overflows into tank #9 where a pH probe signals a meter in control panel #11 controls pump #12 to pump NaOH from tank #15 to adjust the pH to 8.5.

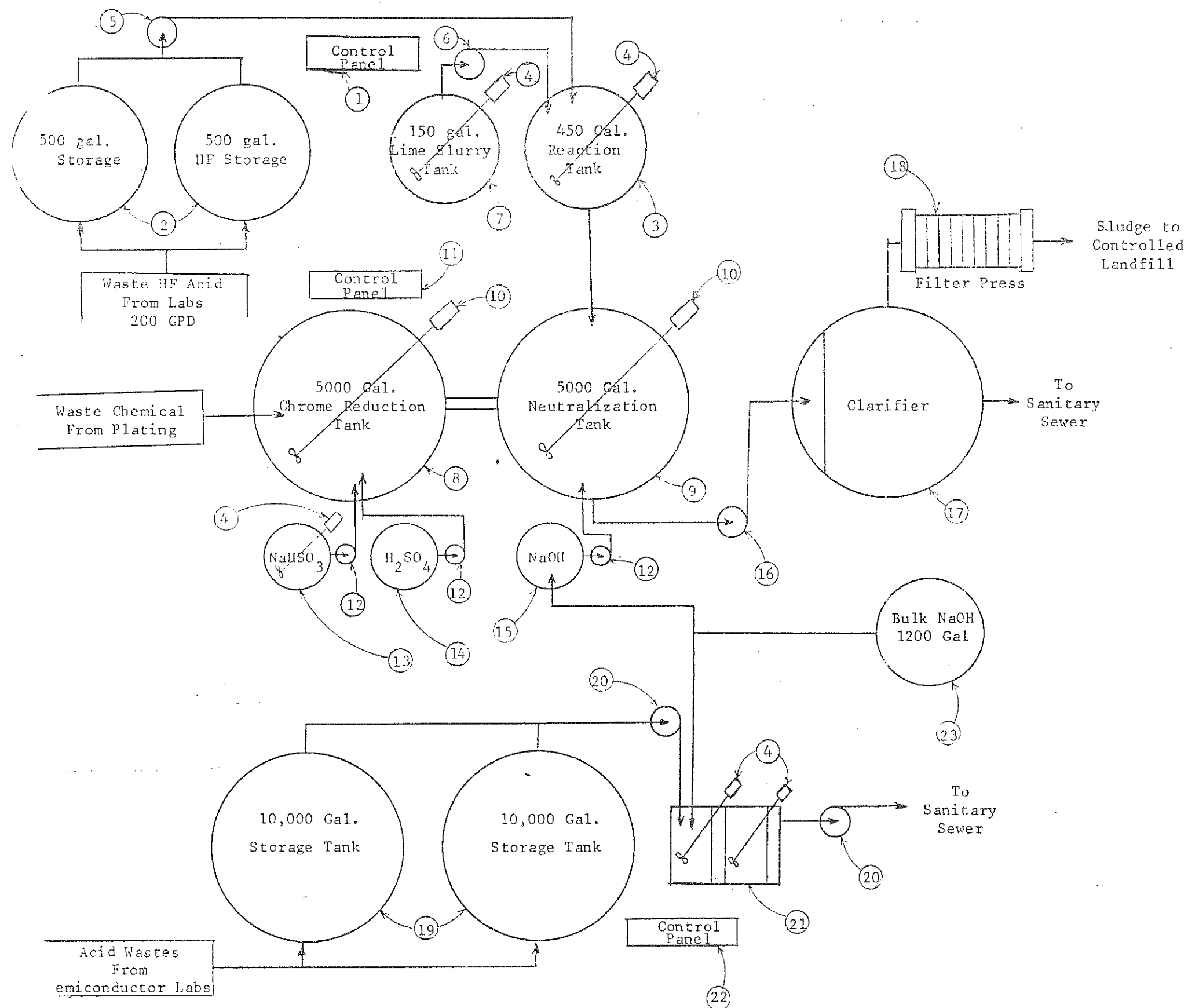
A uniform mixture is maintained with mixer #10. The mixture is then pumped #16 into the clarifier #12 where the sludge settles out and is dewatered in the filter press #18. The dewatered sludge is then sent to the EPA approved landfill. The clear effluent from the top of the clarifier is overflowed to sanitary sewer.

### 5.4.3 Acid Neutralization System

Dilute acid waste from Semiconductor lab drains into underground storage tanks #19. The acid waste is then pumped #20 into the compartmented treatment tank #21. A pH probe in the first compartment controls the NaOH addition from the bulk tank #23.

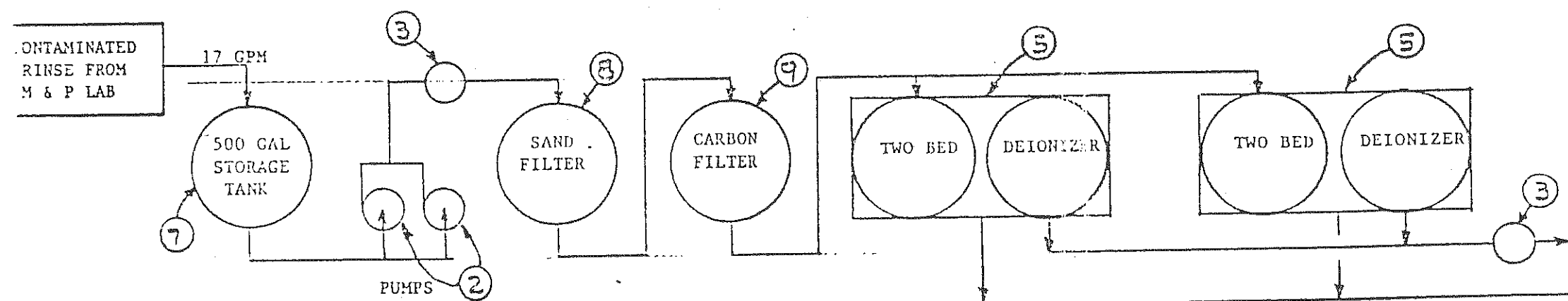
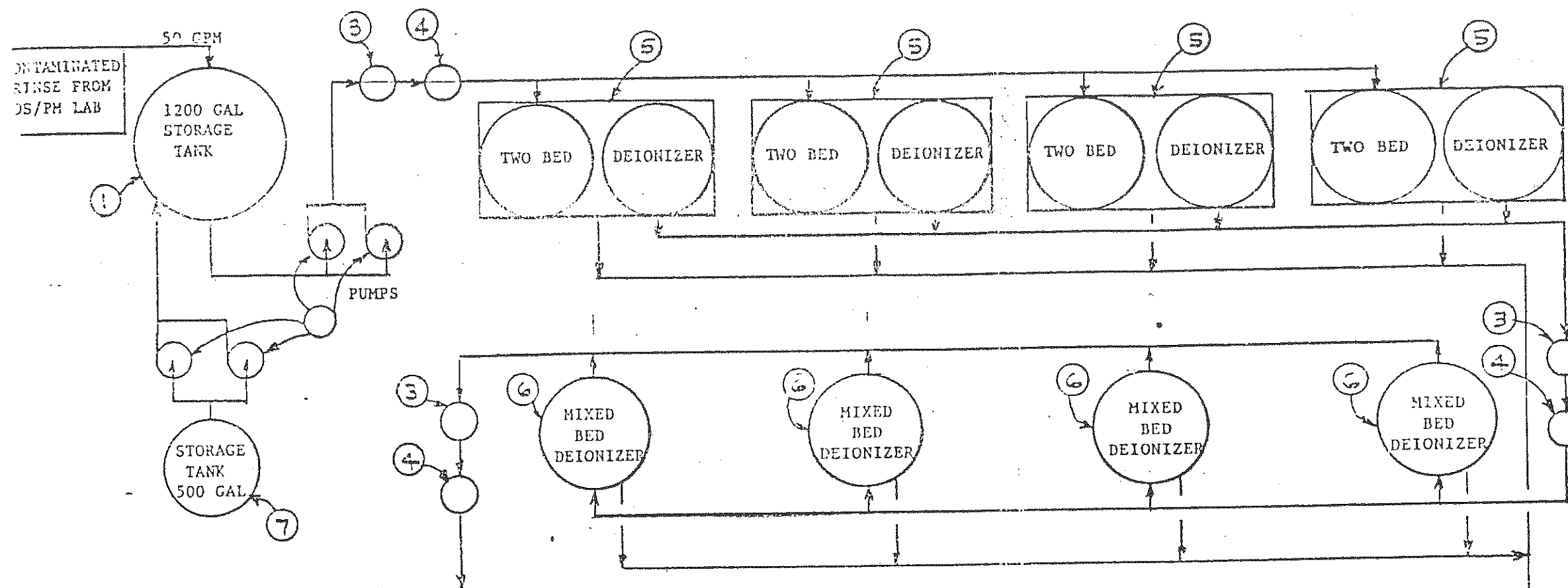
5.4.3 Acid Neutralization System (Cont.)

through a meter on control panel #22. A second pH probe in the second compartment confirms a pH of 8 before the treated waste is pumped to sanitary sewer. Mixers #4 in both compartments assure a homogeneous mixture.



ITEM	Description	Qty.
1	Control Panel w/pH meter	1
2	HF Storage Tank, 400 gal., raven, 4DIA2	2
3	Reaction tank, 450 gal., Poly W/FRP case	1
4	Mixer lightening model ND-1	5
5	Air diaphragm pump, Brute, "1"	1
6	Air diaphragm pump, SB1½-A	1
7	Lime Slurry Tank, 150 Gal., Poly	1
8	Chrome reduction tank 5,000 gal.	1
9	Heavy Metal Reduction Tank, 5,000 gal.	1
10	Mixer, Lightning Model NLDG-200	2
11	Control Panel W/2 pH Sensors and 1 ORP sensor	1
12	Air Diaphragm Pump, Cole Parmer 7152	3
13	NaHSO <sub>3</sub> Storage Tank, 150 gal., Poly W/FRP case	1
14	H <sub>2</sub> SO <sub>4</sub> Storage Tank, 150 gal., Poly W/FRP case	1
15	NaOH Storage Tank, 150 gal., Poly W/FRP case	1
16	Air Diaphragm Pump, ST1½-A	1
17	Clarifier, Haviland Model 2000T	1
18	Filter Press, Haviland HPC-2, 2 cu. ft.	1
19	Waste Acid Storage Tanks 10,000 gal.	2
20	Air Diaphragm Pump, SB2-A	2
21	Compartmented Treatment Tank, Haviland	1
22	Control Panel w/2 pH Sensors	1
23	Bulk NaOH Storage Tank	1

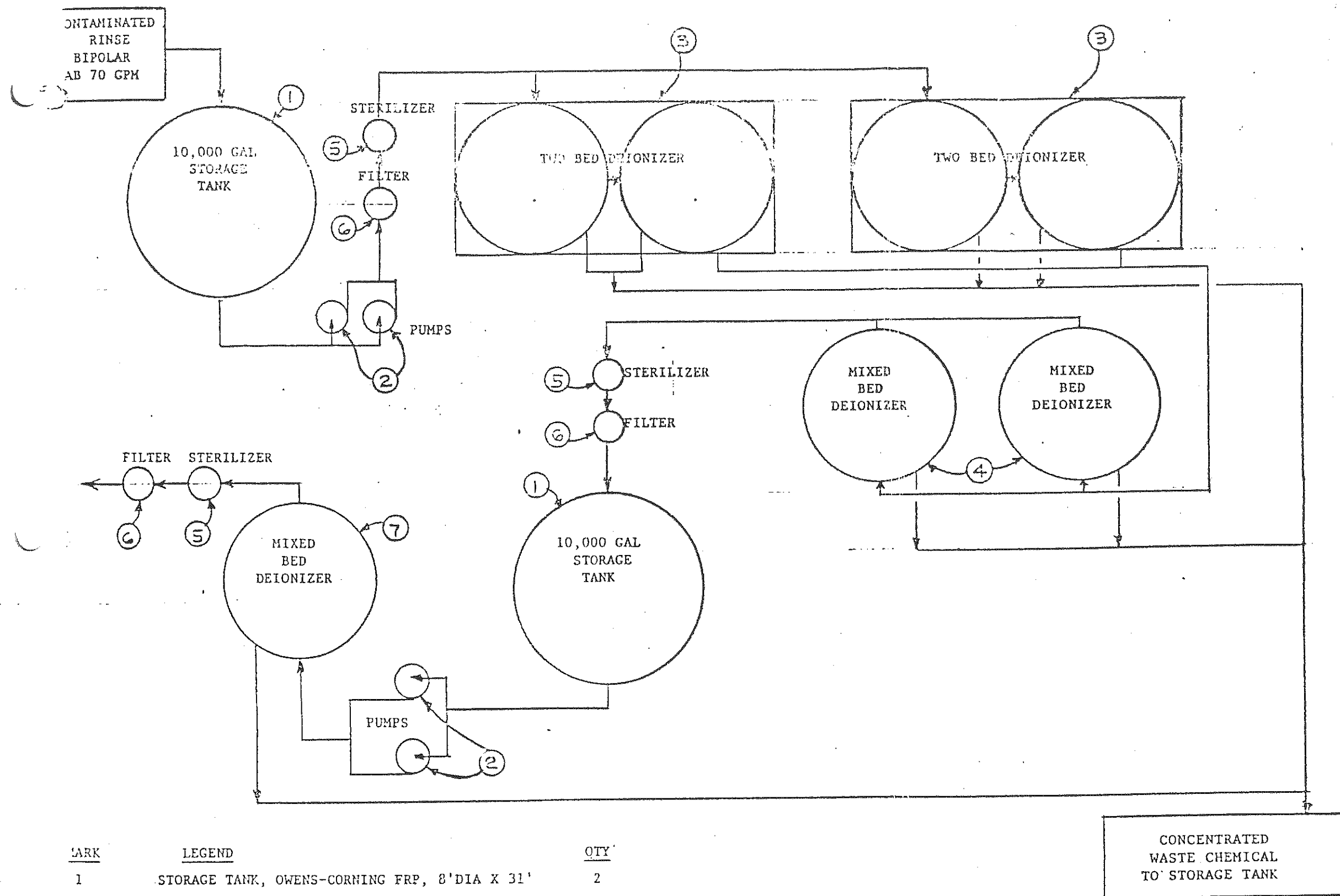
SPERRY PARK FACILITY  
WASTE TREATMENT SYSTEM  
FEBRUARY 1984



ARK	LEGEND	QTY
1	STORAGE TANK, 1200 GAL, JUSTIN	1
2	CENTRIFUGAL PUMP, GOULD, 3196	6
3	ULTRA-VIOLET STERILIZER, AQUAFINE CSL-4	5
4	CARTRIDGE FILTERS, PALL TRINITY	3
5	TWO BED DEIONIZERS, 1wt, hbe 785	6
6	MIXED BED DEIONIZERS, 1WT, MB-885	4
7	STORAGE TANK, 500 GAL	2
8	SAND FILTER, 1WT, DUAFILT DF-230	1
9	CARBON FILTER, 1WT, CARBON FILTER CM-242	1

CONCENTRATED  
WASTE CHEMICAL  
TO STORAGE TANK

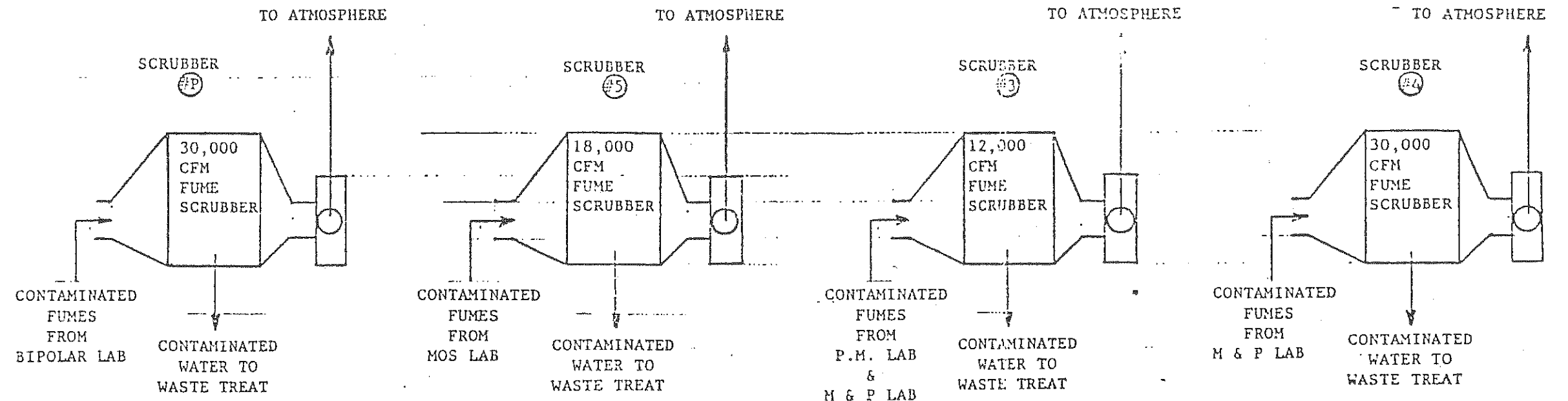
UNIVAC PARK FACILITY  
MOS/PM & P&M DEIONIZING SYSTEM  
SEPTEMBER 1979 B.B.



MARK	LEGEND	QTY
1	STORAGE TANK, OWENS-CORNING FRP, 8'DIA X 31'	2
2	CENTRIFUGAL PUMPS, GOULD, 20 H.P.	4
3	TWO BED DEIONIZERS, 1WT, ASB-3636	2
4	MIXED BED DEIONIZERS, 1WT, MB 3096	2
5	ULTRA-VIOLET STERILIZER, AQUAFINE	3
6	CARTRIDGE FILTERS, PALL TRINITY	3
7	MIXED BED DEIONIZER, 1WT, MB 3696	1

Revision A 9/7/84  
Page 95B

UNIVAC PARK FACILITY  
BIPOLAR DEIONIZING SYSTEM  
SEPTEMBER 1979 B. B.



NUMBER  
①

DESCRIPTION  
HEIL PROCESS EQUIPMENT COMPANY; MODEL HCL-42; 30,000 CFM  
MPCA PERMIT # (PERMIT APPLIED FOR)

②

CEILCOTE COMPANY; MODEL HPR-180; 18,000 CFM  
MPCA PERMIT #1104-76-0-2

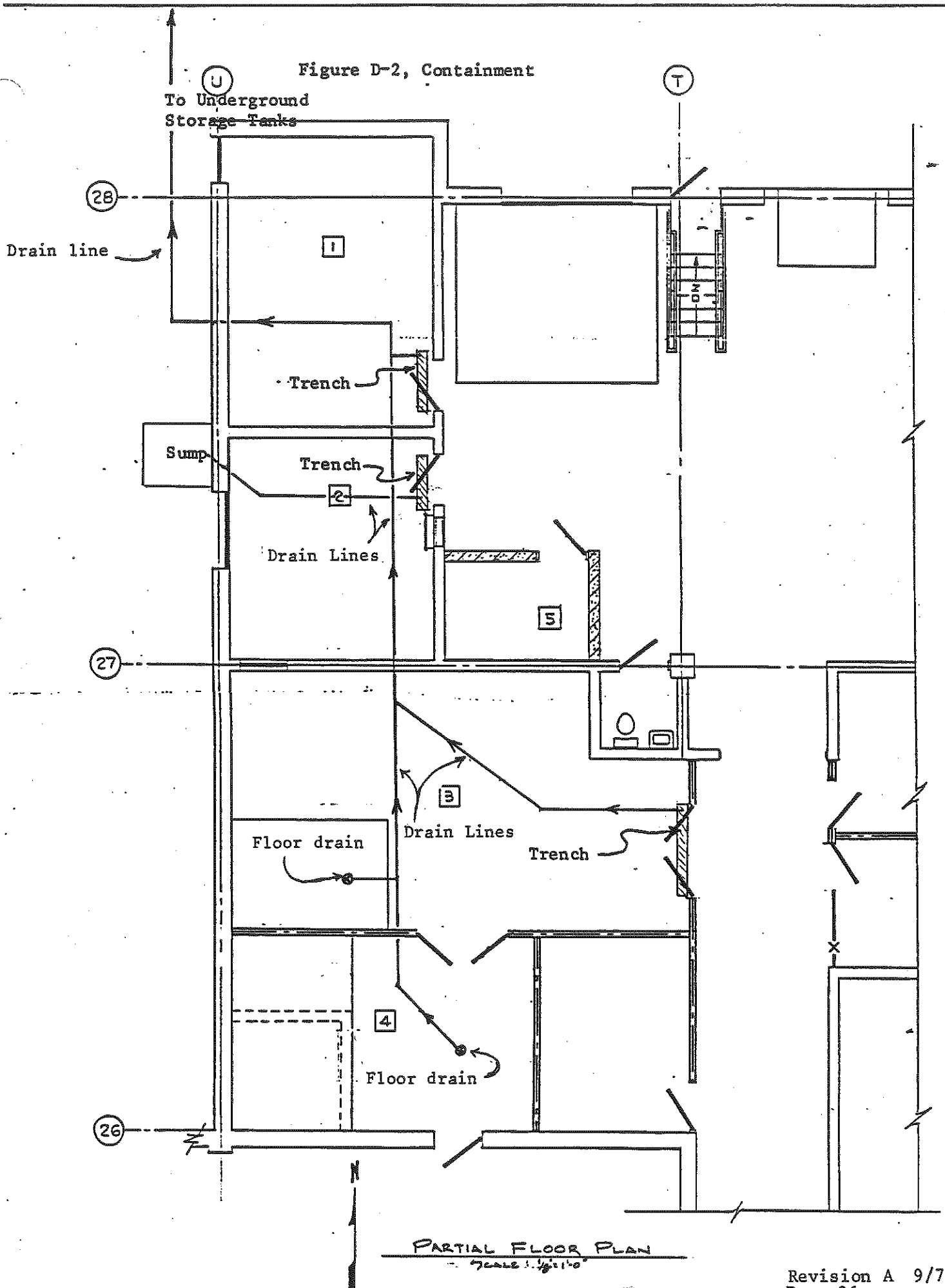
③

CEILCOTE COMPANY; MODEL HAW1012; 12,000 CFM  
MPCA PERMIT #1104-76-0-2

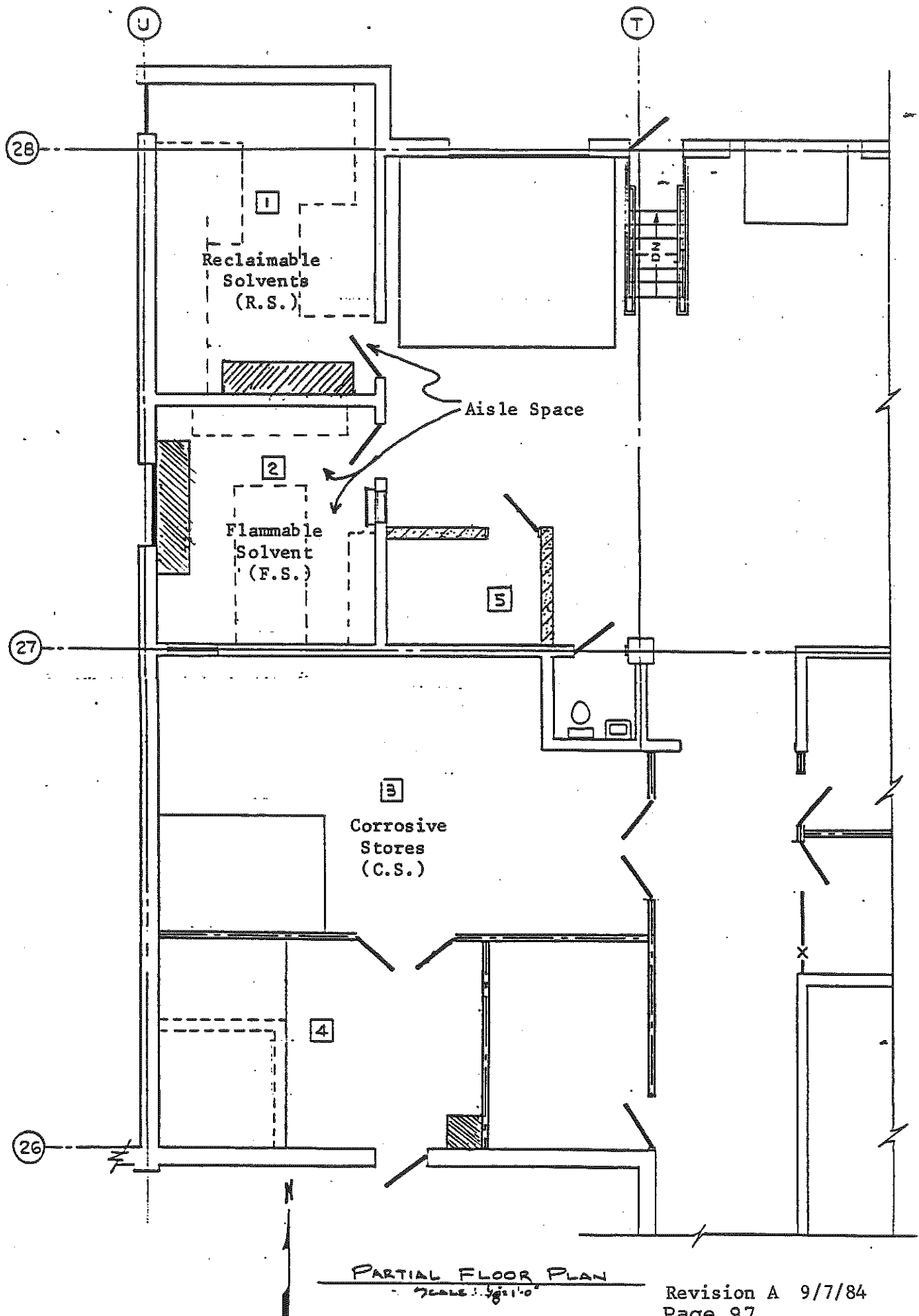
④

CEILCOTE COMPANY; MODEL HAW2830; 30,000 CFM  
MPCA PERMIT #1104-76-0-2

Figure D-2, Containment



FIGURES D-3, WASTE STORAGE



[illegible][illegible]

## SECTION E

### GROUNDWATER MONITORING SYSTEM

The requirement for ground water monitoring are not applicable to a storage facility such as Sperry Park's facility which only stores containers and tanks inside and not for disposal.

## SECTION F

### PROCEDURE TO PREVENT HAZARDS

Information in this section is submitted in accordance with requirements of 40 CFR Part 122.25 a (4), (5), (6), (8), and (9), 270.14(G)(4),(5). Sperry will address the following subject areas: general security provisions, inspection schedule, preparedness and prevention, spill prevention and prevention of incompatible wastes mixing.

#### F-1 SECURITY

The complete facility is surrounded by a microwave intruder detection system with guards at the three employee entrances Figure F-1 (Page 103a). All Sperry personnel have a badge that has to be shown to enter the facility. All other personnel entering facility must sign in on a sign-in sheet Figure F-3 (Page 104). The truck gate is open and protected by a guard station from 6 am to 6 pm weekdays. That gate also has a 24 hour TV surveillance from the South entrance guard station. Truck drivers must give their name, the name of their company and the truck license number before being allowed entry into the facility. This is recorded by guards.

During non-working hours a guard makes hourly tours of the facility stopping at stations marked on Figure F-2 (Page 103b). Each station has a Detex Key which must be inserted into the recorder carried by the guard to record that his station was actually inspected. A sign is posted at doorways into Hazardous Materials Storage area "DANGER - UNAUTHORIZED PERSONNEL KEEP OUT".

## F-2 INSPECTION SCHEDULE

Attached is our inspection procedures for our facility. They are shown in Appendix F-1, (Page 106). Environmental Control Procedure ECP 37029, Hazardous Waste Facility Inspection is included. These procedures and records are maintained within the facility. This procedure explains all items checked, the frequency of inspections and the actions required in the event a malfunction. The inspection log identifies the person making the inspection and the time and date of the inspection. These inspection logs are retained for a minimum of 3 years in the environmental lab.

All items in Appendix F-1 are inspected as indicated in the procedure. These items are initialized by the personnel only when inspection has been completed. This procedure is in the possession of the inspector while the inspection is in progress. If any maintenance must be completed a maintenance check list Appendix F-4 (Page 144) is filled out. A copy is given to the maintenance foreman to indicate the item requiring the maintenance, and our department retains one copy.

Our Security Department has a fire control equipment inspection procedure Appendix F-5 (Page 145) for fire extinguishers, sprinkler system and self contained breathing apparatus available for general use. Emergency Response Equipment inspection as described in Appendix G-1, (Page 153).

## F-3 WAIVER OF PREPAREDNESS AND PREVENTION REQUIREMENTS

The applicant does not wish to request a waiver of the preparedness and prevention requirements under 40 CFR 264 Subpart C. Requirements for this Subpart are primarily addressed in Section D, F and G of this application.

### F-3a Equipment Requirements

Communications: Our facility has a complete communication system. We have a paging system which can be heard throughout the building which is designed for emergency use only. There are phones as marked on Figure F-4 (page 105). Whenever guards are on patrol, they carry a 2-way radio which also becomes available in an emergency. Each Environmental Management person has a personal pager to be used to get a message to any individual or by a common page to everyone in the Department. All phones can be used as an emergency phone by dialing 3000. This call rings at the Security post where two way radio contact is available as well as paging. The 3000 number also rings in the medical department.

Fire Control: Fire control equipment, sprinklers and eyewashers are located as shown on Figure F-4 (Page 105). Included is fire control equipment inspection procedure Appendix F-5 (page 145).

### F-3b Aisle Space

Aisle space is shown on Figures D-3 and D-3a (pages 97 and 97a). All emergency equipment is discussed in Section G.

## F-4 PREVENTIVE PROCEDURES, STRUCTURES AND EQUIPMENT

### F-4a Load/Unloading

Loading and unloading procedures are covered in section D, F and G

#### F-4b Runoff

All our storage is inside, there is no runoff to contend with.

#### F-4c Water Supplies

Ground water is protected by eliminating any possible way discharges of hazardous materials on unprotected ground. Refer to Section D for protective measures.

#### F-4d Equipment and Power Failure

Emergency power for waste treatment system is supplied by one of four emergency generators. There is also a complete plant wide emergency light system.

#### F-4e Personnel Protective Equipment

Protective equipment for personnel is provide; safety glasses, lab coats, rubber boots, chemical suits, hard hats with face shield, and any other protective equipment needed. Consult Sections G for other equipment available.

#### F-5 PREVENTION OF REACTION OF IGNITABLE, REACTIVE AND INCOMPATIBLE WASTES

Management of wastes is covered in Section D.

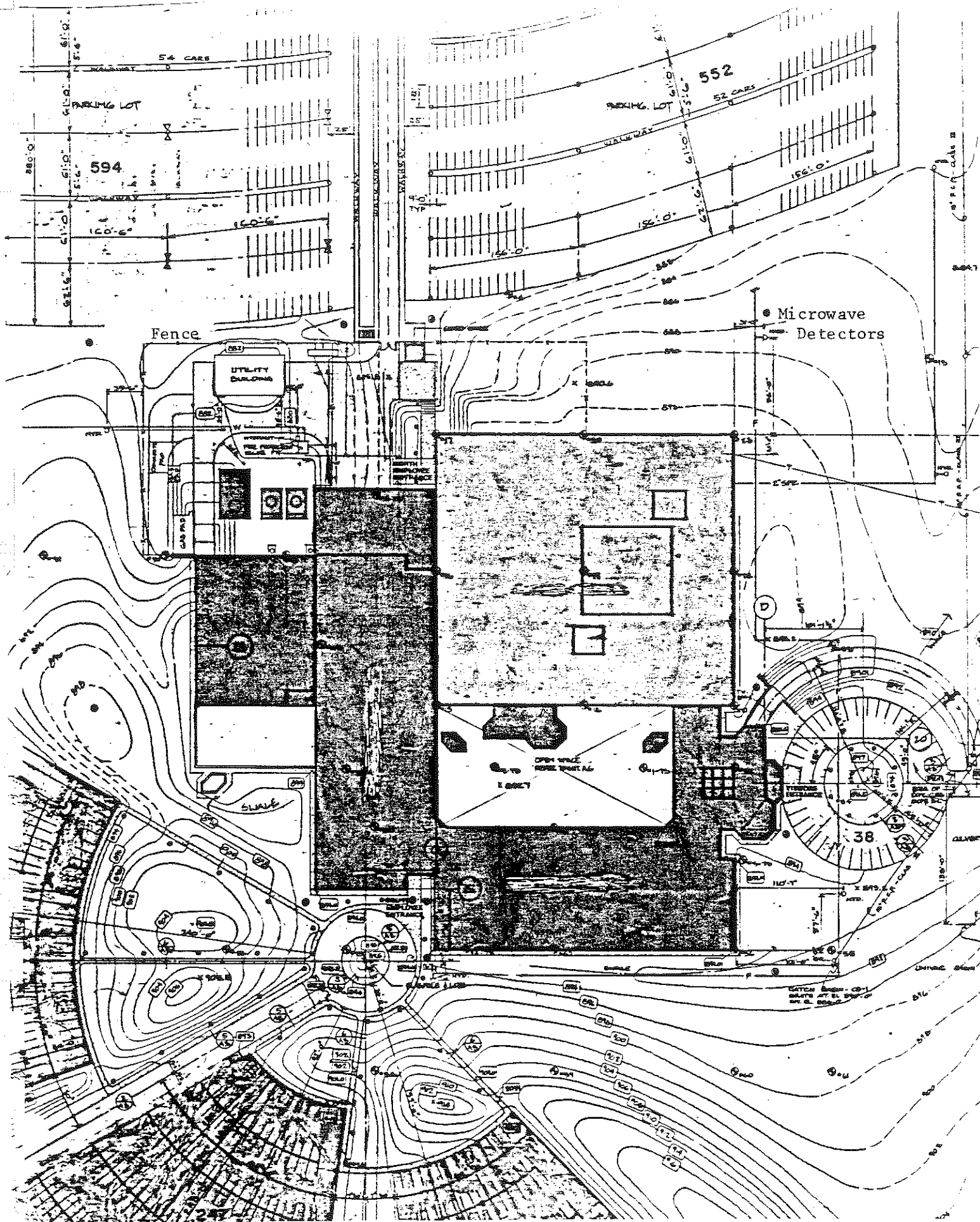


Figure F-1. Security Print



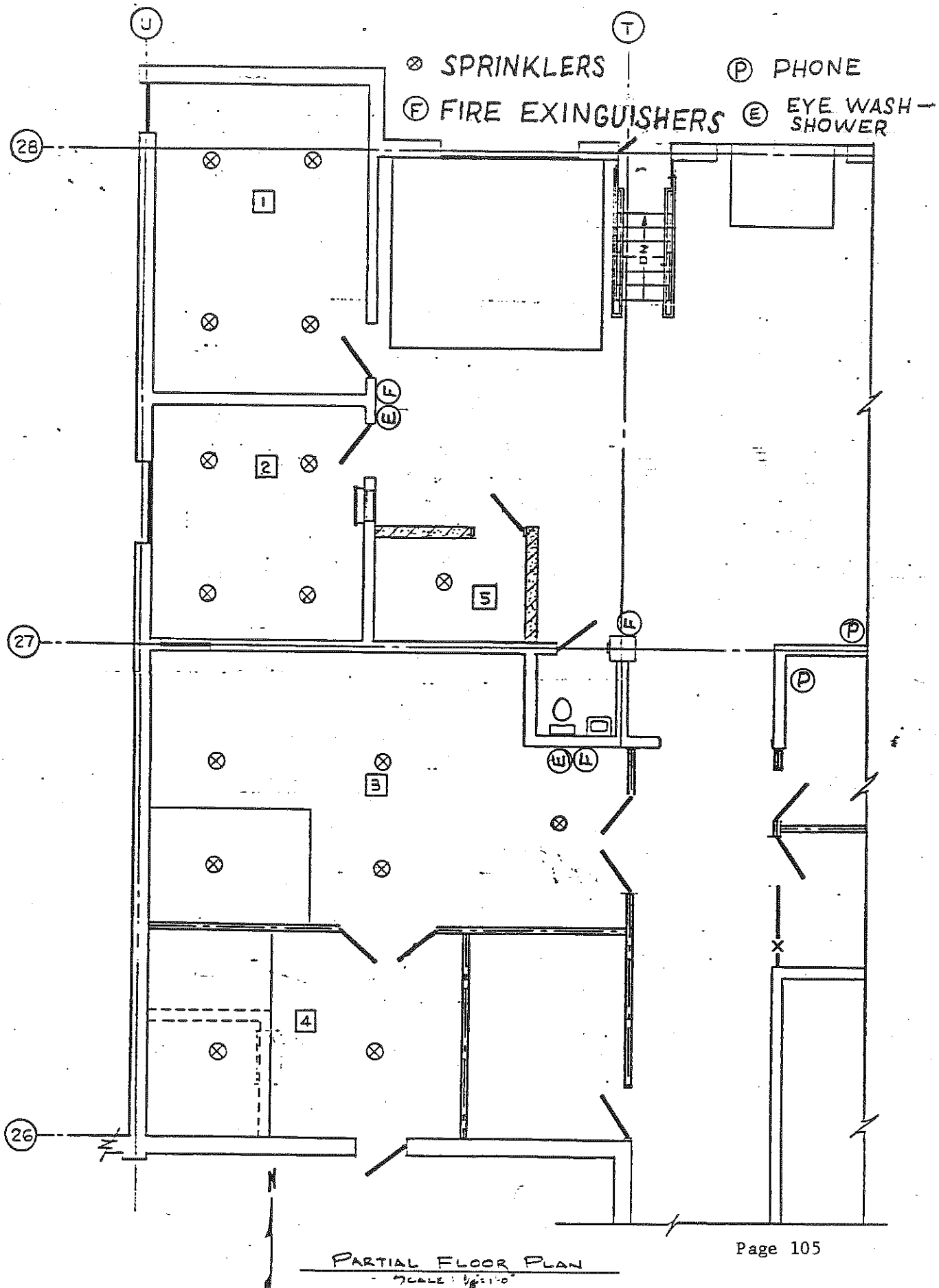


SC1-2857 (Rev 10/73)

* BADGE TYPE:	V - VISITOR	VU - VISITOR UNESCORTED	ET - EMPLOYEE TEMPORARY

**FIGURE F-3**

# FIGURE F-4



APPENDIX F-1

HAZARDOUS WASTE FACILITY INSPECTION



ECP	37029	REV	A
PAGE	1	OF	9

## ENVIRONMENTAL CONTROL PROCEDURE

### DETAIL DESCRIPTION

Hazardous Waste Facility Inspection - Disk L-ac-2

### REF

40 CFR 264.15

### ENGINEER

*Mark E. Wickham*

### DATE

10/4/94

### APPROVAL

*[Signature]* Martin

### DATE

10/4/84

### 1.0 General

The purpose of this procedure is to provide guidelines for inspecting the hazardous waste storage areas and containers for malfunctions, deterioration, operator errors, and discharges of hazardous material which may lead to release of hazardous waste constituents to the environment or a threat to human health.

The schedule of inspection will be maintained as specified in this procedure. The record must be maintained at each facility and the records must remain on file for a minimum of three years. Record the date and time of the inspection, note the observations made, and the date and nature of any repairs or other remedial actions taken. Carry a copy of this procedure with you when doing inspection to use as a guide for finding problems.

### 2.0 Schedule of Inspection

#### 2.1 Areas and Items for Inspection

##### 2.1.1 Hazardous waste storage tank and bulk chemical tanks

1. Inspect the waste chromic acid storage tank on a daily basis for the following: the level of the waste in the tank; the operation of the liquid level sensor; the operation of the feed system; inspect the tank for evidence of corrosion, leaking valves, pipes, fittings and seams. Record the results of the inspection and any remedial action necessary.
2. Drain, clean and inspect the interior and exterior of bulk tanks for evidence of corrosion, cracks, etc. on a yearly basis. The tank entry (confined space) procedure must be followed before and during the time when personnel are inside the tank. This includes the waste and virgin chromic acid tanks; sodium hydroxide; hydrochloric acid; sodium bisulfite, and sulfuric tanks at Shepard Road. At Sperry Park inspect the bulk sodium hydroxide and hydrochloric acid tanks. There are no bulk chemical tanks at Midway.
3. Check the level of underground secondary containment tanks at Sperry Park and Midway weekly. When the tank level reaches half full or if there is more than a 10" level increase between inspections a notation should be made in the action log and a sample should be taken for analysis. The tank should be emptied and the contents disposed of according to regulations.



ECP	37029	REV	A
PAGE	2	OF	9

## ENVIRONMENTAL CONTROL PROCEDURE

### DETAIL DESCRIPTION

Hazardous Waste Facility Inspection

### REF

40 CFR 264.15

### ENGINEER

*Mark E. Wilson*

### DATE

10/4/84

### APPROVAL

*[Signature]* Martin

### DATE

10/4/84

#### 2.1.2 Incompatible waste

Inspect the storage areas to insure that wastes are stored in the correct area. This requirement is to verify that incompatible wastes are not stored together. Report this in the remedial action log, record any discrepancies and describe remedial actions taken.

#### 2.1.3 Aisle space

While inspecting the storage areas, check the aisle space around the stored drums and other areas to insure adequate space for movement to any area in the event of a fire, spill or other emergency. Report this in the remedial action log, record any discrepancies and describe remedial actions taken.

#### 2.1.4 Waste containing drums

Inspect the waste drums that contain hazardous waste on a weekly basis. Inspect the containers to determine if they are stored on the grating to keep them out of direct contact with accumulated liquid; inspect the containers for evidence of leaks and that the drums are closed when not in use. Record the results of the inspection on the remedial action log and note any corrective action necessary.

#### 2.1.5 Waste storage areas

1. Floors and walls - check for deterioration or cracks that would allow spilled chemicals to migrate out of the storage area once each week. Take corrective action if necessary. Record this action on the remedial action log.
2. Dikes - check for deterioration or cracks that would allow spilled chemicals to migrate out of the diked area on a weekly basis. This includes the dikes for the virgin chemical tanks as well as the waste chromic tank. This would include the sodium hydroxide, hydrochloric acid, virgin chromic acid, sodium bisulfite and sulfuric tanks at Shepard Road. At Sperry Park, the following dikes are included: sodium hydroxide and hydrochloric acid. If any chemical is in the diked area, pump it into an approved container or directly into the waste treatment system if appropriate. Clean out the diked area and determine the cause. Take corrective action if necessary and record this action on the remedial action log.



ECP	37029	REV	A
PAGE	3	OF	9

## ENVIRONMENTAL CONTROL PROCEDURE

### DETAIL DESCRIPTION

Hazardous Waste Facility Inspection

### REF

40 CFR 264.15

### ENGINEER

*Mark C. Wilson*

### DATE

10/4/84

### APPROVAL

*[Signature]*

### DATE

10/4/84

3. Sprinklers and fire extinguishers - visually check the sprinklers for signs of corrosion once per week. Notify the Security Department of any situation which may require additional review. Record this information in the remedial action log.

Visually check the fire extinguishers on a weekly basis to verify they are in the correct location. Notify the Security Department of any discrepancies. Record the information in the remedial action log and describe any action taken.

NOTE: The Security Department checks the operation of the sprinkler system and fire extinguishers on a schedule approved by the local fire marshall and the Sperry insurance carrier.

#### 2.1.6 Solvent room sump

The drains from the solvent storage areas drain into a sump located outside the solvent room in each facility. Check the level weekly. The sump will collect spills from the solvent storage area as well as water used to rinse the floor for general clean up of the area. When the tank becomes 1/3 full with water or a known chemical spill occurs, sample and have the contents analyzed to determine the concentration of the contaminants. Pump the sump contents into an approved container and dispose of according to ECP37001. Record the weekly inspection on the remedial action log and record any activity required.

#### 2.1.3 Safety showers and eyewash

Check the operation of the safety showers and eyewash stations located in the waste chemical storage areas on a monthly basis. Initial and date the inspection label at the location of each station. Record the inspection on the remedial action log and note any action required.

#### 2.1.8 Manifest discrepancies

Review the manifests once each month for discrepancies, such as a variation over 10% in bulk waste shipped; incorrect number of drums shown; or incorrect identification of waste. If a discrepancy is noted reconcile the difference with the appropriate facility. Make corrections on our copies. If the discrepancy cannot be resolved within 15 days, notify the Region V office of the EPA describing the details. Also review the manifest copies to insure that all copies have been



ECP	37029	REV	A
PAGE	4	OF	9

## ENVIRONMENTAL CONTROL PROCEDURE

### DETAIL DESCRIPTION

Hazardous Waste Facility Inspection

### REF

40 CFR 264.15

### ENGINEER

*Mark E. Wilson*

### DATE

10/4/84

### APPROVAL

*[Signature]*

### DATE

10/4/84

received from the appropriate facility and sent to the correct location per ECP37028. If a manifest copy has not been received from the disposal or transfer facility within 30 days, investigate the reason and try to resolve the problem. If the copy has not been received within 45 days, notify the Minnesota Pollution Control Agency and Region V EPA. Report the results of each review in the remedial action log, record any discrepancies and the action taken.

#### 2.1.9 Bulk chemical and waste chemical shipping/receiving area

When bulk chemicals are being delivered or waste bulk chemicals are being pumped out of our waste tank, a designated Sperry employee must be present at all times during this process. Have any accumulated debris removed from the area. Report this in the remedial action log, record any discrepancies and describe remedial actions taken.

#### 2.1.10 Inspection of PCB containing capacitors

The in service capacitors are to be inspected weekly for leaks or visible cracks. The collection tray beneath the capacitor should be inspected for any accumulation of oil.

#### 2.2 Inspection Required at Each Facility and Frequency of Inspection

##### 2.2.1 Shepard Road

- |  |          |
|--|----------|
| 1. Waste chromic acid tank per 2.1.1.1             | Daily    |
| Waste chromic acid tank per 2.1.1.2                | Yearly   |
| 2. Incompatible waste per 2.1.2                    | Daily    |
| 3. Aisle space per 2.1.3                           | Daily    |
| 4. Waste containing drums per 2.1.4                | Weekly   |
| 5. Waste storage areas per 2.1.5                   | Weekly   |
| 6. Solvent sump per 2.1.6                          | Weekly   |
| 7. Safety shower and eyewash per 2.1.7             | Monthly  |
| 8. Manifest discrepancies per 2.1.8                | Monthly  |
| 9. Bulk chemical shipping/receiving area per 2.1.9 | As Req'd |

##### 2.2.2 Midway

- |   |        |
|---|--------|
| 1. Incompatible waste per 2.1.2               | Weekly |
| 2. Aisle space per 2.1.3                      | Weekly |
| 3. Waste containing drums per 2.1.4           | Weekly |
| 4. Waste storage area per 2.1.5.1 and 2.1.5.3 | Weekly |



ECP	37029	REV	A
PAGE	5	OF	9

## ENVIRONMENTAL CONTROL PROCEDURE

### DETAIL DESCRIPTION

Hazardous Waste Facility Inspection

### REF

40 CFR 264.15

### ENGINEER

*Mark E. Johnson*

### DATE

*10/4/84*

### APPROVAL

*Martin*

### DATE

*10/4/84*

- |   |         |
|---|---------|
| 5. PCB capacitor inspection 2.1.10      | Weekly  |
| 6. Underground containment tank 2.1.1.3 | Weekly  |
| 7. Safety shower and eyewash per 2.1.7  | Monthly |
| 8. Manifest discrepancies per 2.1.8     | Monthly |

### 2.2.3 Sperry Park

- |  |          |
|--|----------|
| 1. Incompatible waste per 2.1.6            | Daily    |
| 2. Aisle space per 2.1.8                   | Daily    |
| 3. Waste containing drums per 2.1.4        | Weekly   |
| 4. Waste storage areas per 2.1.1           | Weekly   |
| 5. Solvent room sump per 2.1.2             | Weekly   |
| 6. PCB capacitor inspection 2.1.10         | Weekly   |
| 7. Underground containment tank 2.1.1.3    | Weekly   |
| 8. Safety showers and eyewashers per 2.1.3 | Monthly  |
| 9. Manifest discrepancies per 2.1.9        | Monthly  |
| 10. Bulk chemical receiving area per 2.1.7 | As Req'd |
| 11. Bulk chemical tanks per 2.1.1.2        | Yearly   |



ECP	37029	REV	A
PAGE	6	OF	9

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION

Hazardous Waste Facility Inspection

REF

40 CFR 264.15

ENGINEER

*M. S. Wilson*

DATE

10/4/84

APPROVAL

*M. S. Wilson*

DATE

10/4/84

SHEPARD ROAD

WEEK OF \_\_\_\_\_ TO \_\_\_\_\_

ITEM INSPECTED		DAILY					
		MON	TUE	WED	THU	FRI	
WASTE CHROMIC TANK 2.1.1.1	INITIALS						
	TIME						
INCOMPATIBLE WASTE 2.1.2	INITIALS						
	TIME						
AISLE SPACE 2.1.3	INITIALS						
	TIME						
BULK SHIP/RECEIVE 2.1.9	INITIALS						
	TIME						
							WEEKLY
WASTE DRUMS 2.1.4	INITIALS						
	TIME						
WASTE STORAGE AREA 2.1.5	INITIALS						
	TIME						
SOLVENT SUMP 2.1.6	DATE						
	INITIALS						
	TIME						
							MONTHLY
SAFETY SHOWERS & EYEWASH 2.1.7	DATE						
	INITIALS						
	TIME						
MANIFEST DISCREPANCIES 2.1.8	DATE						
	INITIALS						
	TIME						
							YEARLY
BULK STORAGE TANKS 2.1.1.2	DATE						
	INITIALS						
	TIME						

NOTE: SEE PAGE 8 FOR NOTES AND REMEDIAL ACTION TAKEN.



ECP	37029	REV	A
PAGE	7	OF	9

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION

Hazardous Waste Facility Inspection

REF

40 CFR 264.15

ENGINEER

*Mad E. Wilson*

DATE

10/4/84

APPROVAL

*[Signature]*

DATE

10/4/84

SPERRY PARK

WEEK OF \_\_\_\_\_ TO \_\_\_\_\_

ITEM INSPECTED		DAILY					
		MON	TUE	WED	THU	FRI	
INCOMPATIBLE WASTE 2.1.2	INITIALS						
	TIME						
AISLE SPACE 2.1.3	INITIALS						
	TIME						
BULK SHIP/RECEIVE 2.1.9	INITIALS						
	TIME						
		WEEKLY					
WASTE DRUMS 2.1.4	INITIALS						
	TIME						
WASTE STORAGE AREA 2.1.5	INITIALS						
	TIME						
SOLVENT SUMP 2.1.6	DATE						
	INITIALS						
	TIME						
PCB CAPACITOR INSPECTION 2.1.10	DATE						
	INITIALS						
	TIME						
UNDERGROUND CONTAINMENT TANKS 2.1.1.3	DATE						
	INITIALS						
	TIME						
		MONTHLY					
SAFETY SHOWERS & EYEWASH 2.1.7	DATE						
	INITIALS						
	TIME						
MANIFEST DISCREPANCIES 2.1.8	DATE						
	INITIALS						
	TIME						
		YEARLY					
BULK STORAGE TANKS 2.1.5.2	DATE						
	INITIALS						
	TIME						

NOTE: SEE PAGE 8 FOR NOTES AND REMEDIAL ACTION TAKEN.



ECP	37029	REV	A
PAGE	8	OF	9

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION

Hazardous Waste Facility Inspection

REF

40 CFR 264.15

ENGINEER

*Mark E. Miller*

DATE

10/9/84

APPROVAL

*M. Miller*

DATE

10/9/84

MIDWAY

WEEK OF \_\_\_\_\_ TO \_\_\_\_\_

ITEM  
INSPECTED

WEEKLY

INCOMPATIBLE WASTE  
2.1.2

DATE

NAME

TIME

aisle space  
2.1.3

DATE

NAME

TIME

WASTE DRUMS  
2.1.4

DATE

NAME

TIME

WASTE STORAGE AREA  
2.1.5.1  
2.1.5.3

DATE

NAME

TIME

PCB CAPACITOR  
INSPECTION  
2.1.10

DATE

NAME

TIME

UNDERGROUND  
CONTAINMENT TANKS  
2.1.1.3

DATE

NAME

TIME

MONTHLY

SAFETY SHOWERS &  
EYEWASH  
2.1.7

DATE

NAME

TIME

MANIFEST  
DISCREPANCIES  
2.1.8

DATE

NAME

TIME

NOTE: SEE PAGE 8 FOR NOTES AND REMEDIAL ACTION TAKEN.



ECP	37029	REV	A
PAGE	9	OF	9

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION		REF
Hazardous Waste Facility Inspection		40 CFR 264.15
ENGINEER	DATE	APPROVAL
<i>Mark E. Wilson</i>	<i>10/4/84</i>	<i>[Signature]</i>
		DATE
		<i>10/4/84</i>

### NOTES:

1. Enter any discrepancies noted during the inspection on the discrepancy log below. Also place the entry number from the remedial action log next to you initials on the check list to identify the problem. Place a circle around the numbers to highlight the entry.
2. If a monthly or yearly inspection is not required during the week the inspection is made or if a load of bulk chemical is not shipped or received enter an N/A in the space for that inspection.
3. Each person using this form must enter your name and initials below as each person making an inspection is identified.

NAME (PRINT)	INITIALS	NAME (PRINT)	INITIALS
_____	_____	_____	_____
_____	_____	_____	_____

### REMEDIAL ACTION LOG

NO	PROBLEM OBSERVED	INI	REMEDIAL ACTION	INI	DATE
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					



ECP	37011	REV	B
PAGE	3	OF	7

## ENVIRONMENTAL CONTROL PROCEDURE

### DETAIL DESCRIPTION

Weekly Operational Check List S.P.

### REF

ENGINEER

DATE

APPROVAL

DATE

### 1.0 WEEKLY OPERATONAL CHECK LIST

#### 1.1 C & C PROBES

All pH probes and the ORP probe should be removed from the tanks and cleaned by washing with water from a hose. If scrubbing is needed, care must be taken to avoid breaking the electrode. Check the probe housings for cracks, abrasion or evidence of leakage.

To calibrate the pH meters, the probe is immersed in a fresh buffer solution and the meter is adjusted to the proper reading by turning the calibration knob on the right front face of the meter. Use a buffer with the pH closest to the most important point for that pH meter. The pH probe in plating WWT tank "A" is calibrated to 2.00 and all others to 8.00. The ORP meter is calibrated by pulling out on the knob and adjusting the meter face to zero.

The locations of the meters are as follows: Plating Reaction tank "A" pH meter and ORP meter are on the WWT control panel upper left and lower left respectively; the Plating Reaction Tank "B" pH meter is on the WWT control panel upper right; the S.C. pH meter #1 is on the WWT control panel lower right; and the S.C. pH meter #2 is below the centrifuge control panel.

#### 1.2 AMOUNT H<sub>2</sub>SO<sub>4</sub>

Check the sulfuric acid day tank to ensure that there is at least  $\frac{1}{2}$  tank remaining. If not, notify Inventory Control to order (4) more carboys.

#### 1.3 AMOUNT BISULFITE

The tank for storage of Sodium Bisulfite is located beside the Bisulfite day tank behind make-up 2-bed "B". This tank should be half full. If not, notify inventory control to order (3) more 100 lb. bags.

#### 1.4 BACKWASH FILTERS

The M & P System and the carbon filters are backwashed as follows:

##### 4.1 Filter backwash procedure

1. Open valves #11 and #12.
2. Close valve #10.



ECP	37011	REV	B
PAGE	4	OF	7

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION

Weekly Operational Check List S.P.

REF

ENGINEER

DATE

APPROVAL

DATE

3. Check flow and pressure at the in service D.I. unit to ensure that they haven't changed significantly. If needed, adjust valve #12 to desired pressure and flowrate.
4. Both filters can be backwashed simultaneously and steps 5-9 apply to each filter.
5. Close valves #1 and #5.
6. Open valves #2 and #6 and open valve #3 to approximately  $\frac{1}{2}$  way and allow the units to backwash for 15 minutes.
7. Close valves #2 and #3.
8. Open valves #1 and #4 and allow the units to rinse for 5 minutes.
9. Close valves #4 and #6 and open valve #5.
10. Open valve #10.
11. Close valves #11 and 12.
12. Check the system for proper operation.

### 1.5 SOLVENT SUMP

On the week indicated, the level of the solvent sump should be checked and appropriate action taken.

### 1.6 BACTERIA SAMPLES

Each week the D.I. water in the equipment room should be checked for bacteria growth as follows:

#### 6.1 Sampling Procedure

1. Eight samples are taken each week. They are: Tank #1 outlet at the discharge of the central recirculating pumps; central 3 micron filter outlet at the discharge of the filter housings; central .45 micron filter outlet at the discharge of the filter housings; tank #2 outlet at the discharge of the polisher pumps; polisher uv sterilizer outlet at the inlet of the .45 filter housings; tank #3 outlet at the discharge of the combined recirculating pumps; combined 3 micron filter outlet at the discharge of the filter housings; and combined mixed bed outlet at the discharge of any combined mixed bed.



ECP	37011	REV	B
PAGE	5	OF	7

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION

Weekly Operational Check List S.P.

REF

ENGINEER

DATE

APPROVAL

DATE

2. Open the sample valve and allow to run at full flow for at least 5 minutes.
3. Throttle the sample valve to a lower flow and continue the rinse for 2-3 minutes.
4. The samplers used are "Millipore total count water testers" and are stored in the lab. Each tester should be labeled with the sample point and date. Remove the cap from the tester and fill the tester with sample water.
5. Replace the cap and let soak for 30 seconds. Remove cap, dump the water and replace cap.
6. Place tester in the incubator in the lab and verify a temperature setting of 35°C - 36°C.
7. The sample may be read after 24 hours. A light reading consists of 0-3 colonies; a medium of 4-10 colonies; and a heavy of 11-20. All test results should be reported to M.E. Wilson at ext. 4220.

### 1.7 R.O. "A" OUT. ACCUM.

Record the number on the R.O. "A" outlet accumulator as a check on how much water is being delivered by the unit. The accumulator is on the R.O. "A" outlet flowmeter which is located between the R.O. units.

### 1.8 R.O. "B" OUT. ACCUM.

Record this number as in section 1.7. The flowmeter is located immediately below the R.O. "A" outlet flowmeter. (Both flowmeters are labeled.)

### 1.9 COMB. MAKE-UP ACCUM.

Record the number on the combined system make-up accumulator as a check on how much D.I. water is being added. The accumulator is on the combined make-up flowmeter and is located to the left of the polisher UV sterilizers behind the central system mixed beds.

### 1.10 M & P MAKE-UP ACCUM.

Record this number as in section 1.9. The flowmeter is located to the right of the combined system control panel across from combined 2B"A".



ECP	37011	REV	B
PAGE	6	OF	7

## ENVIRONMENTAL CONTROL PROCEDURE

### DETAIL DESCRIPTION

Weekly Operational Check List S.P.

### REF

ENGINEER

DATE

APPROVAL

DATE

#### 1.11 PER. MAKE-UP ACCUM.

Record the make-up to the peripheral D.I. system from the accumulator on the flowmeter on the peripheral D.I. control panel.

#### 1.12 CITY WATER ACCUM.

Record this number as in section 1.9. The flowmeter is located beside the north door of the D.I. Equipment room.

#### 1.13 FOULING INDEX

The fouling index is a check on the soft water to ascertain that it will not foul the R.O. membranes. The test is performed as follows:

##### 13.1 Fouling index test procedure.

1. Remove the lower half of the filter holder and place a millipore .45 micron filter in it using a pair of tweezers. Be careful not to touch the filter. Replace the lower half of the holder.
2. Open the valve at the right of the pressure gauge and adjust the pressure regulator for a press of 30 PSI. Close the valve.
3. Place a 500 ml container under the filter holder and open the valve under the pressure gauge allowing water to pass through the filter. Note the time it takes to fill the container (or take a 500 ml sample) and note the time as  $T_i$ .
4. Take another 500 ml sample after the test has run for 5 minutes and note the time as  $T_5$ . Repeat for 10 and 15 minutes.
5. The fouling index is calculated as follows:

$$F.I. = \frac{P_{30}}{T} = \frac{(1 - \frac{T_i}{T_f})}{T} (100)$$

$T_i$  is the initial fill time;  $T_f$  is the final fill time ( $T_5$ ,  $T_{10}$ , or  $T_{15}$ ) and  $T$  is the total time of the test (5, 10 or 15 minutes). If the fouling index is greater than 5.0 the water presents a danger to the R.O. membranes and the R.O. unit must be immediately shut down until the cause is determined and corrected.



ECP	37011	REV	B
PAGE	7	OF	7

## ENVIRONMENTAL CONTROL PROCEDURE

### DETAIL DESCRIPTION

Weekly Operational Check List S.P.

REF

ENGINEER

DATE

APPROVAL

DATE

#### 1.14 TOC CHECKLIST (WEEKLY)

The weekly section of the total organic carbon monitor checklist should be done according to ECP 37027.

#### 1.15 OUTSIDE WW TANKS

On the week indicated the outside waste water tanks level should be checked and appropriate action taken.

#### 1.16 PCB CAPACITORS

Check the capacitors which contain PCB's for leakage and accumulation in the catch trays below each one. These capacitors are marked with a yellow PCB's label.

#### 1.17 SAFETY SHOWER

Check the safety showers in the D.I. equipment room to ensure that they are working properly, are unobstructed by drums or equipment, and are not dirty. Be sure to check the integral eyewash fountains as well. If any problem is noticed action must be taken IMMEDIATELY to correct it. There are two showers in the D.I. equipment room. One is near the HF treatment system behind make-up 2B"A" and the other is against the north wall beside the plating WWT system discharge pump. Also, check the showers in the corrosive stores room, the shipping/receiving dock and the plating pit.

APPENDIX F-3  
HAZARDOUS WASTE FACILITY INSPECTION



ECP	37029	REV	0
PAGE	1	OF	8

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION		REF
Hazardous Waste Facility Inspection - Disk		40 CFR 264.15
ENGINEER	DATE	APPROVED
D. E. MacDonald		R. J. Martin
		DATE
		8/24/84

### 1.0 General

The purpose of this procedure is to provide guidelines for inspecting the hazardous waste storage areas and containers for malfunctions, deterioration, operator errors, and discharges of hazardous material which may lead to release of hazardous waste constituents to the environment or a threat to human health.

The schedule of inspection will be maintained as specified in this procedure. The record must be maintained at each facility and the records must remain on file for a minimum of three years. Record the date and time of the inspection, note the observations made, and the date and nature of any repairs or other remedial actions taken.

### 2.0 Schedule of Inspection

#### 2.1 Areas and Items for Inspection

##### 2.1.1 Hazardous waste storage tank and bulk chemical tanks

1. Inspect the waste chromic acid storage tank on a daily basis for the following: the level of the waste in the tank; the operation of the liquid level sensor; the operation of the feed system; inspect the tank for evidence of corrosion, leaking valves, pipes, fittings and seams. Record the results of the inspection and any remedial action necessary.
2. Drain, clean and inspect the interior and exterior of bulk tanks for evidence of corrosion, cracks, etc. on a yearly basis. The tank entry (confined space) procedure must be followed before and during the time when personnel are inside the tank. This includes the waste and virgin chromic acid tanks; sodium hydroxide; hydrochloric acid; sodium bisulfite, and sulfuric tanks at Shepard Road. At Sperry Park inspect the bulk sodium hydroxide and hydrochloric acid tanks. There are no bulk chemical tanks at Midway.

##### 2.1.2 Incompatible waste

Inspect the storage areas to insure that wastes are stored in the correct area. This requirement is to verify that incompatible wastes are not stored together. Report this in the remedial action log, record any discrepancies and describe remedial actions taken.



ECP	37029	REV	0
PAGE	2	OF	8

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION Hazardous Waste Facility Inspection - Disk _____		REF 40 CFR 264.15	
ENGINEER	DATE	APPROVAL	DATE

### 2.1.3 Aisle space

While inspecting the storage areas, check the aisle space around the stored drums and other areas to insure adequate space for movement to any area in the event of a fire, spill or other emergency. Report this in the remedial action log, record any discrepancies and describe remedial actions taken.

### 2.1.4 Waste containing drums

Inspect the waste drums that contain hazardous waste on a weekly basis. Inspect the containers to determine if they are stored on the grating to keep them out of direct contact with accumulated liquid; inspect the containers for evidence of leaks and that the drums are closed when not in use. Record the results of the inspection on the remedial action log and note any corrective action necessary.

### 2.1.5 Waste storage areas

1. Floors and walls - check for deterioration or cracks that would allow spilled chemicals to migrate out of the storage area once each week. Take corrective action if necessary. Record this action on the remedial action log.
2. Dikes - check for deterioration or cracks that would allow spilled chemicals to migrate out of the diked area on a weekly basis. This includes the dikes for the virgin chemical tanks as well as the waste chromic tank. This would include the sodium hydroxide, hydrochloric acid, virgin chromic acid, sodium bisulfite and sulfuric tanks at Shepard Road. At Sperry Park, the following dikes are included: sodium hydroxide and hydrochloric acid. If any chemical is in the diked area, pump it into an approved container or directly into the waste treatment system if appropriate. Clean out the diked area and determine the cause. Take corrective action if necessary and record this action on the remedial action log.
3. Sprinklers and fire extinguishers - visually check the sprinklers for signs of corrosion once per week. Notify the Security Department of any situation which may require additional review. Record this information in the remedial action log.



ECP	37029	REV	0
PAGE	3	OF	8

## ENVIRONMENTAL CONTROL PROCEDURE

### DETAIL DESCRIPTION

Hazardous Waste Facility Inspection - Disk

### REF

40 CFR 264.15

ENGINEER

DATE

APPROVAL

DATE

Visually check the fire extinguishers on a weekly basis to verify they are in the correct location. Notify the Security Department of any discrepancies. Record the information in the remedial action log and describe any action taken.

NOTE: The Security Department checks the operation of the sprinkler system and fire extinguishers on a schedule approved by the local fire marshall and the Sperry insurance carrier.

#### 2.1.6 Solvent room sump

The drains from the solvent storage areas drain into a sump located outside the solvent room in each facility. Check the level weekly. The sump will collect spills from the solvent storage area as well as water used to rinse the floor for general clean up of the area. When the tank becomes 1/3 full with water or a known chemical spill occurs, sample and have the contents analyzed to determine the concentration of the contaminants. Pump the sump contents into an approved container and dispose of according to ECP37001. Record the weekly inspection on the remedial action log and record any activity required.

#### 2.1.3 Safety showers and eyewash

Check the operation of the safety showers and eyewash stations located in the waste chemical storage areas on a monthly basis. Initial and date the inspection label at the location of each station. Record the inspection on the remedial action log and note any action required.

#### 2.1.8 Manifest discrepancies

Review the manifests once each month for discrepancies, such as a variation over 10% in bulk waste shipped; incorrect number of drums shown; or incorrect identification of waste. If a discrepancy is noted reconcile the difference with the appropriate facility. Make corrections on our copies. If the discrepancy cannot be resolved within 15 days, notify the Region V office of the EPA describing the details. Also review the manifest copies to insure that all copies have been received from the appropriate facility and sent to the correct location per ECP37028. If a manifest copy has not been received from the disposal or transfer facility within 30 days, investigate the reason and try to resolve the problem. If the copy has not been received within 45 days, notify the Minnesota Pollution Control Agency and Region V EPA. Report the results



ECP	37029	REV	0
PAGE	4	OF	8

## ENVIRONMENTAL CONTROL PROCEDURE

### DETAIL DESCRIPTION

Hazardous Waste Facility Inspection - Disk

### REF

40 CFR 264.15

ENGINEER

DATE

APPROVAL

DATE

of each review in the remedial action log, record any discrepancies and the action taken.

#### 2.1.9 Bulk chemical and waste chemical shipping/receiving area

When bulk chemicals are being delivered or waste bulk chemicals are being pumped out of our waste tank, a designated Sperry employee must be present at all times during this process. Have any accumulated debris removed from the area. Report this in the remedial action log, record any discrepancies and describe remedial actions taken.

#### 2.2 Inspection Required at Each Facility and Frequency of Inspection

##### 2.2.1 Shepard Road

- |  |          |
|--|----------|
| 1. Waste chromic acid tank per 2.1.1.1             | Daily    |
| Waste chromic acid tank per 2.1.1.2                | Yearly   |
| 2. Incompatible waste per 2.1.2                    | Daily    |
| 3. Aisle space per 2.1.3                           | Daily    |
| 4. Waste containing drums per 2.1.4                | Weekly   |
| 5. Waste storage areas per 2.1.5                   | Weekly   |
| 6. Solvent sump per 2.1.6                          | Weekly   |
| 7. Safety shower and eyewash per 2.1.7             | Monthly  |
| 8. Manifest discrepancies per 2.1.8                | Monthly  |
| 9. Bulk chemical shipping/receiving area per 2.1.9 | As Req'd |

##### 2.2.2 Midway

- |   |         |
|---|---------|
| 1. Incompatible waste per 2.1.2               | Weekly  |
| 2. Aisle space per 2.1.3                      | Weekly  |
| 3. Waste containing drums per 2.1.4           | Weekly  |
| 4. Waste storage area per 2.1.5.1 and 2.1.5.3 | Weekly  |
| 5. Safety shower and eyewash per 2.1.7        | Monthly |
| 6. Manifest discrepancies per 2.1.8           | Monthly |

##### 2.2.3 Sperry Park

- |  |          |
|--|----------|
| 1. Incompatible waste per 2.1.6            | Daily    |
| 2. Aisle space per 2.1.8                   | Daily    |
| 3. Waste containing drums per 2.1.4        | Weekly   |
| 4. Waste storage areas per 2.1.1           | Weekly   |
| 5. Solvent room sump per 2.1.2             | Weekly   |
| 6. Safety showers and eyewashers per 2.1.3 | Monthly  |
| 7. Manifest discrepancies per 2.1.9        | Monthly  |
| 8. Bulk chemical receiving area per 2.1.7  | As Req'd |
| 9. Bulk chemical tanks per 2.1.1.2         | Yearly   |



ECP	37029	REV	0
PAGE	5	OF	8

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION

Hazardous Waste Facility Inspection - Disk \_\_\_\_\_

REF

40 CFR 264.15

ENGINEER

DATE

APPROVAL

DATE

SHEPARD ROAD

WEEK OF \_\_\_\_\_ TO \_\_\_\_\_

ITEM INSPECTED		DAILY					
		MON	TUE	WED	THU	FRI	
WASTE CHROMIC TANK 2.1.1.1	INITIALS						
	TIME						
INCOMPATIBLE WASTE 2.1.2	INITIALS						
	TIME						
AISLE SPACE 2.1.3	INITIALS						
	TIME						
BULK SHIP/RECEIVE 2.1.9	INITIALS						
	TIME						
							WEEKLY
WASTE DRUMS 2.1.4	INITIALS						
	TIME						
WASTE STORAGE AREA 2.1.5	INITIALS						
	TIME						
SOLVENT SUMP 2.1.6	DATE						
	INITIALS						
	TIME						
							MONTHLY
SAFETY SHOWERS & EYEWASH 2.1.7	DATE						
	INITIALS						
	TIME						
MANIFEST DISCREPANCIES 2.1.8	DATE						
	INITIALS						
	TIME						
							YEARLY
BULK STORAGE TANKS 2.1.1.2	DATE						
	INITIALS						
	TIME						

NOTE: SEE PAGE 8 FOR NOTES AND REMEDIAL ACTION TAKEN.



ECP	37029	REV	0
PAGE	6	OF	8

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION Hazardous Waste Facility Inspection - Disk	REF 40 CFR 264.15
--	----------------------

ENGINEER	DATE	APPROVAL	DATE
----------	------	----------	------

SPERRY PARK

WEEK OF \_\_\_\_\_ TO \_\_\_\_\_

ITEM INSPECTED		DAILY					
		MON	TUE	WED	THU	FRI	
INCOMPATIBLE WASTE 2.1.2	INITIALS						
	TIME						
AISLE SPACE 2.1.3	INITIALS						
	TIME						
BULK SHIP/RECEIVE 2.1.9	INITIALS						
	TIME						
							WEEKLY
WASTE DRUMS 2.1.4	DATE						
	INITIALS						
	TIME						
WASTE STORAGE AREA 2.1.5	DATE						
	INITIALS						
	TIME						
SOLVENT SUMP 2.1.6	DATE						
	INITIALS						
	TIME						
							MONTHLY
SAFETY SHOWERS & EYEWASH 2.1.7	DATE						
	INITIALS						
	TIME						
MANIFEST DISCREPANCIES 2.1.8	DATE						
	INITIALS						
	TIME						
							YEARLY
BULK STORAGE TANKS 2.1.5.2	DATE						
	INITIALS						
	TIME						

NOTE: SEE PAGE 8 FOR NOTES AND REMEDIAL ACTION TAKEN.



ECP	37029	REV	0
PAGE	7	OF	8

## ENVIRONMENTAL CONTROL PROCEDURE

### DETAIL DESCRIPTION

Hazardous Waste Facility Inspection - Disk \_\_\_\_\_

### REF

40 CFR 264.15

ENGINEER \_\_\_\_\_

DATE \_\_\_\_\_

APPROVAL \_\_\_\_\_

DATE \_\_\_\_\_

MIDWAY

WEEK OF \_\_\_\_\_ TO \_\_\_\_\_

### ITEM

### INSPECTED

### WEEKLY

INCOMPATIBLE WASTE  
2.1.2

DATE \_\_\_\_\_

NAME \_\_\_\_\_

TIME \_\_\_\_\_

AISLE SPACE  
2.1.3

DATE \_\_\_\_\_

NAME \_\_\_\_\_

TIME \_\_\_\_\_

WASTE DRUMS  
2.1.4

DATE \_\_\_\_\_

NAME \_\_\_\_\_

TIME \_\_\_\_\_

WASTE STORAGE AREA  
2.1.5.1  
2.1.5.3

DATE \_\_\_\_\_

NAME \_\_\_\_\_

TIME \_\_\_\_\_

SAFETY SHOWERS &  
EYEWASH  
2.1.7

DATE \_\_\_\_\_

NAME \_\_\_\_\_

TIME \_\_\_\_\_

MANIFEST  
DISCREPANCIES  
2.1.8

DATE \_\_\_\_\_

NAME \_\_\_\_\_

TIME \_\_\_\_\_

### MONTHLY

NOTE: SEE PAGE 8 FOR NOTES AND REMEDIAL ACTION TAKEN.



ECP	37029	REV	0
PAGE	8	OF	8

## ENVIRONMENTAL CONTROL PROCEDURE

### DETAIL DESCRIPTION

Hazardous Waste Facility Inspection - Disk

### REF

40 CFR 264.15

ENGINEER	DATE	APPROVAL	DATE
----------	------	----------	------

### NOTES:

1. Enter any discrepancies noted during the inspection on the discrepancy log below. Also place the entry number from the remedial action log next to you initials on the check list to identify the problem. Place a circle around the numbers to highlight the entry.
2. If a monthly or yearly inspection is not required during the week the inspection is made or if a load of bulk chemical is not shipped or received enter an N/A in the space for that inspection.
3. Each person using this form must enter your name and initials below as each person making an inspection is identified.

NAME (PRINT)	INITIALS	NAME (PRINT)	INITIALS

### REMEDIAL ACTION LOG

NO	PROBLEM OBSERVED	INI	REMEDIAL ACTION	INI	DATE
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					



ECP	37029	REV	B
PAGE	1	OF	9

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION Hazardous Waste Facility Inspection - Disk L-ac-2		REF 40 CFR 264.15
ENGINEER <i>Mark P. Wilson</i>	DATE 12/12/85	APPROVAL <i>Stogun Martin</i>
		DATE 12/12/85

### 1.0 General

The purpose of this procedure is to provide guidelines for inspecting the hazardous waste storage areas and containers for malfunctions, deterioration, operator errors, and discharges of hazardous material which may lead to release of hazardous waste constituents to the environment or a threat to human health:

The schedule of inspection will be maintained as specified in this procedure. The record must be maintained at each facility and the records must remain on file for a minimum of three years. Record the date and time of the inspection, note the observations made, and the date and nature of any repairs or other remedial actions taken. Carry a copy of this procedure with you when doing inspection to use as a guide for finding problems.

### 2.0 Schedule of Inspection

#### 2.1 Areas and Items for Inspection

##### 2.1.1 Hazardous waste storage tank and bulk chemical tanks

1. Inspect the waste chromic acid and waste organic liquids storage tanks on a daily basis for the following: the level of the waste in the tank; the operation of the liquid level sensor; the operation of the feed system; inspect the tank for evidence of corrosion, leaking valves, pipes, fittings and seams. Record the results of the inspection and any remedial action necessary.
2. Drain, clean and inspect the interior and exterior of bulk tanks for evidence of corrosion, cracks, etc. on a yearly basis. The tank entry (confined space) procedure must be followed before and during the time when personnel are inside the tank. This includes the waste and virgin chromic acid tanks, sodium hydroxide, hydrochloric acid, sodium bisulfite, waste organic liquid, and sulfuric tanks at Shepard Road. At Sperry Park inspect the bulk sodium hydroxide and hydrochloric acid tanks. There are no bulk chemical tanks at Midway.
3. Check the level of underground secondary containment tanks at Sperry Park and Midway weekly. When the tank level reaches half full or if there is more than a 10" level increase between inspections a notation should be made in the action log and a sample should be taken for analysis. The tank should be emptied and the contents disposed of according to regulations.



ECP	37029	REV	B
PAGE	2	OF	9

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION		REF	
Hazardous Waste Facility Inspection		40 CFR 264.15	
ENGINEER	DATE	APPROVAL	DATE

### 2.1.2 Incompatible waste

Inspect the storage areas to insure that wastes are stored in the correct area. This requirement is to verify that incompatible wastes are not stored together. Report this in the remedial action log, record any discrepancies and describe remedial actions taken.

### 2.1.3 Aisle space

While inspecting the storage areas, check the aisle space around the stored drums and other areas to insure adequate space for movement to any area in the event of a fire, spill or other emergency. Report this in the remedial action log, record any discrepancies and describe remedial actions taken.

### 2.1.4 Waste containing drums

Inspect the waste drums that contain hazardous waste on a weekly basis. Inspect the containers to determine if they are stored on the grating to keep them out of direct contact with accumulated liquid; inspect the containers for evidence of leaks and that the drums are closed when not in use. Record the results of the inspection on the remedial action log and note any corrective action necessary.

### 2.1.5 Waste storage areas

1. Floors and walls - check for deterioration or cracks that would allow spilled chemicals to migrate out of the storage area once each week. Take corrective action if necessary. Record this action on the remedial action log.
2. Dikes - check for deterioration or cracks that would allow spilled chemicals to migrate out of the diked area on a weekly basis. This includes the dikes for the virgin chemical tanks as well as the waste chromic tank. This would include the sodium hydroxide, hydrochloric acid, virgin chromic acid, sodium bisulfite, sulfuric and waste organic liquid tanks at Shepard Road. At Sperry Park, the following dikes are included: sodium hydroxide and hydrochloric acid. If any chemical is in the diked area, pump it into an approved container or directly into the waste treatment system if appropriate. Clean out the diked area and determine the cause. Take corrective action if necessary and record this action on the remedial action log.



ECP	37029	REV	B
PAGE	3	OF	9

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION

Hazardous Waste Facility Inspection

REF

40 CFR 264.15

ENGINEER

DATE

APPROVAL

DATE

3. Sprinklers and fire extinguishers - visually check the sprinklers for signs of corrosion once per week. Notify the Security Department of any situation which may require additional review. Record this information in the remedial action log.

Visually check the fire extinguishers on a weekly basis to verify they are in the correct location. Notify the Security Department of any discrepancies. Record the information in the remedial action log and describe any action taken.

NOTE: The Security Department checks the operation of the sprinkler system and fire extinguishers on a schedule approved by the local fire marshall and the Sperry insurance carrier.

### 2.1.6 Solvent room sump

The drains from the solvent storage areas drain into a sump located outside the solvent room in each facility. Check the level weekly. The sump will collect spills from the solvent storage area as well as water used to rinse the floor for general clean up of the area. When the tank becomes 1/3 full with water or a known chemical spill occurs, sample and have the contents analyzed to determine the concentration of the contaminants. Pump the sump contents into an approved container and dispose of according to ECP37001. Record the weekly inspection on the remedial action log and record any activity required.

### 2.1.3 Safety showers and eyewash

Check the operation of the safety showers and eyewash stations located in the waste chemical storage areas on a monthly basis. Initial and date the inspection label at the location of each station. Record the inspection on the remedial action log and note any action required.

### 2.1.8 Manifest discrepancies

Review the manifests once each month for discrepancies, such as a variation over 10% in bulk waste shipped; incorrect number of drums shown; or incorrect identification of waste. If a discrepancy is noted reconcile the difference with the appropriate facility. Make corrections on our copies. If the discrepancy cannot be resolved within 15 days, notify the Region V office of the EPA describing the details. Also review the manifest copies to insure that all copies have been



ECP	37029	REV	B
PAGE	4	OF	9

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION		REF	
Hazardous Waste Facility Inspection		40 CFR 264.15	
ENGINEER	DATE	APPROVAL	DATE

received from the appropriate facility and sent to the correct location per ECP37028. If a manifest copy has not been received from the disposal or transfer facility within 30 days, investigate the reason and try to resolve the problem. If the copy has not been received within 45 days, notify the Minnesota Pollution Control Agency and Region V EPA. Report the results of each review in the remedial action log, record any discrepancies and the action taken.

### 2.1.9 Bulk chemical and waste chemical shipping/receiving area

When bulk chemicals are being delivered or waste bulk chemicals are being pumped out of our waste tank, a designated Sperry employee must be present at all times during this process. Have any accumulated debris removed from the area. Report this in the remedial action log, record any discrepancies and describe remedial actions taken.

### 2.1.10 Inspection of PCB containing capacitors

The in service capacitors are to be inspected weekly for leaks or visible cracks. If leaks are noted, take the appropriate action, as in ECP 37009 for spills or leaks.

## 2.2 Inspection Required at Each Facility and Frequency of Inspection

### 2.2.1 Shepard Road

- |  |          |
|--|----------|
| 1. Waste chromic acid tank per 2.1.1.1             | Daily    |
| Waste chromic acid tank per 2.1.1.2                | Yearly   |
| 2. Incompatible waste per 2.1.2                    | Daily    |
| 3. Aisle space per 2.1.3                           | Daily    |
| 4. Waste containing drums per 2.1.4                | Weekly   |
| 5. Waste storage areas per 2.1.5                   | Weekly   |
| 6. Solvent sump per 2.1.6                          | Weekly   |
| 7. Safety shower and eyewash per 2.1.7             | Monthly  |
| 8. Manifest discrepancies per 2.1.8                | Monthly  |
| 9. Bulk chemical shipping/receiving area per 2.1.9 | As Req'd |
| 10. PCB Capacitor Inspection per 2.1.10            | Weekly   |

### 2.2.2 Midway

- |   |        |
|---|--------|
| 1. Incompatible waste per 2.1.2               | Weekly |
| 2. Aisle space per 2.1.3                      | Weekly |
| 3. Waste containing drums per 2.1.4           | Weekly |
| 4. Waste storage area per 2.1.5.1 and 2.1.5.3 | Weekly |



ECP	37029	REV	B
PAGE	5	OF	9

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION	REF
Hazardous Waste Facility Inspection	40 CFR 264.15

ENGINEER	DATE	APPROVAL	DATE
----------	------	----------	------

- |   |         |
|---|---------|
| 5. PCB capacitor inspection 2.1.10      | Weekly  |
| 6. Underground containment tank 2.1.1.3 | Weekly  |
| 7. Safety shower and eyewash per 2.1.7  | Monthly |
| 8. Manifest discrepancies per 2.1.8     | Monthly |

### 2.2.3 Sperry Park

- |  |          |
|--|----------|
| 1. Incompatible waste per 2.1.6            | Daily    |
| 2. Aisle space per 2.1.8                   | Daily    |
| 3. Waste containing drums per 2.1.4        | Weekly   |
| 4. Waste storage areas per 2.1.1           | Weekly   |
| 5. Solvent room sump per 2.1.2             | Weekly   |
| 6. PCB capacitor inspection 2.1.10         | Weekly   |
| 7. Underground containment tank 2.1.1.3    | Weekly   |
| 8. Safety showers and eyewashers per 2.1.3 | Monthly  |
| 9. Manifest discrepancies per 2.1.9        | Monthly  |
| 10. Bulk chemical receiving area per 2.1.7 | As Req'd |
| 11. Bulk chemical tanks per 2.1.1.2        | Yearly   |



ECP	37029	REV	B
PAGE	6	OF	9

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION Hazardous Waste Facility Inspection	REF 40 CFR 264.15
---	----------------------

ENGINEER	DATE	APPROVAL	DATE
----------	------	----------	------

		SHEPARD ROAD					WEEK OF _____ TO _____	
ITEM INSPECTED		DAILY						
		MON	TUE	WED	THU	FRI		
WASTE CHROMIC TANK 2.1.1.1	INITIALS							
	TIME							
WASTE ORGANIC LIQUID 2.1.1.1	INITIALS							
	TIME							
INCOMPATIBLE WASTE 2.1.2	INITIALS							
	TIME							
AISLE SPACE 2.1.3	INITIALS							
	TIME							
BULK SHIP/RECEIVE 2.1.9	INITIALS							
	TIME							
							WEEKLY	
WASTE DRUMS 2.1.4	DATE							
	INITIALS							
	TIME							
WASTE STORAGE AREA 2.1.5	DATE							
	INITIALS							
	TIME							
SOLVENT SUMP 2.1.6	DATE							
	INITIALS							
	TIME							
PCB CAPACITOR INSPECTION 2.1.10	DATE							
	INITIALS							
	TIME							
							MONTHLY	
SAFETY SHOWERS & EYEWASH 2.1.7	DATE							
	INITIALS							
	TIME							
MANIFEST DISCREPANCIES 2.1.8	DATE							
	INITIALS							
	TIME							
							YEARLY	
BULK STORAGE TANKS 2.1.1.2	DATE							
	INITIALS							
	TIME							

NOTE: SEE PAGE 8 FOR NOTES AND REMEDIAL ACTION TAKEN.



ECP	37029	REV	B
PAGE	7	OF	9

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION Hazardous Waste Facility Inspection		REF 40 CFR 264.15
ENGINEER	DATE	APPROVAL
		DATE

		SPERRY PARK					WEEK OF _____ TO _____	
ITEM INSPECTED		DAILY						
		MON	TUE	WED	THU	FRI		
INCOMPATIBLE WASTE 2.1.2	INITIALS							
	TIME							
AISLE SPACE 2.1.3	INITIALS							
	TIME							
BULK SHIP/RECEIVE 2.1.9	INITIALS							
	TIME							
		WEEKLY						
WASTE DRUMS 2.1.4	DATE							
	INITIALS							
	TIME							
WASTE STORAGE AREA 2.1.5	DATE							
	INITIALS							
	TIME							
SOLVENT SUMP 2.1.6	DATE							
	INITIALS							
	TIME							
PCB CAPACITOR INSPECTION 2.1.10	DATE							
	INITIALS							
	TIME							
UNDERGROUND CONTAINMENT TANKS 2.1.1.3	DATE							
	INITIALS							
	TIME							
		MONTHLY						
SAFETY SHOWERS & EYEWASH 2.1.7	DATE							
	INITIALS							
	TIME							
MANIFEST DISCREPANCIES 2.1.8	DATE							
	INITIALS							
	TIME							
		YEARLY						
BULK STORAGE TANKS 2.1.5.2	DATE							
	INITIALS							
	TIME							

NOTE: SEE PAGE 8 FOR NOTES AND REMEDIAL ACTION TAKEN.



ECP	37029	REV	B
PAGE	8	OF	9

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION	REF
Hazardous Waste Facility Inspection	40 CFR 264.15

ENGINEER	DATE	APPROVAL	DATE
----------	------	----------	------

MIDWAY

WEEK OF \_\_\_\_\_ TO \_\_\_\_\_

ITEM  
INSPECTED

WEEKLY

INCOMPATIBLE WASTE  
2.1.2

DATE  
NAME  
TIME

aisle space  
2.1.3

DATE  
NAME  
TIME

WASTE DRUMS  
2.1.4

DATE  
NAME  
TIME

WASTE STORAGE AREA

DATE  
NAME  
TIME

PCB CAPACITOR  
INSPECTION  
2.1.10

DATE  
NAME  
TIME

UNDERGROUND  
CONTAINMENT TANKS  
2.1.1.3

DATE  
NAME  
TIME

MONTHLY

SAFETY SHOWERS &  
EYEWASH  
2.1.7

DATE  
NAME  
TIME

MANIFEST  
DISCREPANCIES  
2.1.8

DATE  
NAME  
TIME

NOTE: SEE PAGE 8 FOR NOTES AND REMEDIAL ACTION TAKEN.



ECP	37029	REV	B
PAGE	9	OF	9

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION

Hazardous Waste Facility Inspection

REF

40 CFR 264.15

ENGINEER

DATE

APPROVAL

DATE

### NOTES:

1. Enter any discrepancies noted during the inspection on the discrepancy log below. Also place the entry number from the remedial action log next to you initials on the check list to identify the problem. Place a circle around the numbers to highlight the entry.
2. If a monthly or yearly inspection is not required during the week the inspection is made or if a load of bulk chemical is not shipped or received enter an N/A in the space for that inspection.
3. Each person using this form must enter your name and initials below as each person making an inspection is identified.

NAME (PRINT)

INITIALS

NAME (PRINT)

INITIALS

_____	_____	_____	_____
_____	_____	_____	_____

### REMEDIAL ACTION LOG

NO	PROBLEM OBSERVED	INI	REMEDIAL ACTION	INI	DATE
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					



ECP	37026	REV	C
PAGE	9	OF	21

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION

Shift Operations Checklist

REF

ENGINEER

DATE

APPROVAL

DATE

Periodically, the filter plates become fouled and must be cleaned with HCl. This is done immediately after dumping and the procedure is as follows:

1. Close all valves and fill acid tank with 40 gallons of HCl. Set air press regulator to 40 PSI.
2. Open the water valve ("W") and the HF reaction tank valve ("R"). These are located between the filter press and the HF reaction tank. Open valves #4 and #5 and allow the pump to run for 1 minute. Close valves #4 and #5.
3. Open valves #3 and #6 and pump acid into the filter press until the sight glass above valve #3 is full. Turn off pump and close valves #3 and #6. Allow unit to acid soak for 15 minutes.
4. Open valves #3 and #6 and pump acid to drain for 1 minute. Open valve #7 and close valve #3.
5. Allow acid to recirculate for  $\frac{1}{2}$  hour.
6. Close valve #7 and open valve #3. Allow the acid pump to drain until the tank is empty.
7. Open valve #4 and close valve #6. Allow the water to pump through the unit for 10 minutes. Turn off the pump and close valves #2 and #4.
8. Close valve "W" and open valve "R".
9. Open the filter press and spray off the filter plates with a hose nozzle or the pressure sprayer.
10. Close the filter press and return to service.

### 1.23 PERIPHERAL D.I. COND.

Check the purity of the water in the peripheral D.I. loop and also see the output of the RC-700 D.I. units. If the RC-700 output is less than 12 megohms, the resin will have to be changed. Save the old resin for reconditioning, and be sure to record the data of change on the RC-700 unit itself. If the water in the loop is less than 2 megohms while the RC-700 output is still acceptable, the cause may be a recent addition of make-up water to the tank. Check again in  $\frac{1}{2}$  hour. If the condition still exists, the cause must be determined and corrected.



ECP	37026	REV	C
PAGE	10	OF	21

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION

### Shift Operations Checklist

REF

ENGINEER	DATE	APPROVAL	DATE
----------	------	----------	------

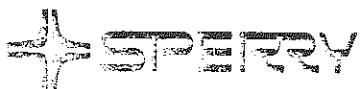
The 2-bed D.I. units are all set up for an automatic regeneration sequence, but the regeneration must be initiated manually. If unit affected has shut itself off, the regeneration is started by pushing the button marked "regenerate" on the control panel. If the unit is still in service, the toggle switch marked "stop service" must be set in the "manual" position; the button marked "stop service" must be pushed; and the "regenerate" button is then pushed. Check to be sure the city water inlet ball valve is open.

Before initiating the regeneration, check to ensure that the regenerant chemical day tanks are filled to the proper levels. In all cases, the acid tank is located to the right of the unit of the caustic tank is to the left. The regenerant chemical amounts are as follows:

1. Make-up units
  - a. Hydrochloric acid - 28 gallons.
  - b. Caustic - Soft water to the lower mark (37 gallons) and sodium hydroxide to the upper mark (18 gallons).
2. Bipolar 2-beds
  - a. Hydrochloric acid - 48 gallons.
  - b. Caustic - Soft water to the lower mark (64 gallons) and sodium Hydroxide to the upper mark (30 gallons).
3. Combined 2-beds
  - a. Hydrochloric acid - 16 gallons.
  - b. Caustic - Soft water to the lower mark (22 gallons) and sodium hydroxide to the upper mark (10 gallons).
4. M & P 2-beds
  - a. Hydrochloric acid - 16 gallons
  - b. Caustic - Soft water to the lower mark (22 gallons) and sodium hydroxide to the upper mark (10 gallons).

Also, check the time settings on the step timers to ensure that they are set correctly. The proper times are as follows:

1. Backwash (same for both backwash steps) - 15 minutes.
2. Acid in cation - 25 minutes.
3. Slow rinse (same for both slow rinse steps) - 15 minutes.



ECP	37026	REV	C
PAGE	11	OF	21

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION

Shift Operations Checklist

REF

ENGINEER

DATE

APPROVAL

DATE

4. Fast rinse cation - 20 minutes.
5. Caustic in anion - 40 minutes.

During much of the regeneration process the water is pure enough to send to the sanitary sewer instead of to the waste water tanks. When regenerating a Bipolar, M & P or make-up unit the flow must be diverted manually by opening the sanitary sewer valve and closing the chemical drain valve. These valves are marked and are located as follows:

1. Make-up 2-beds - Behind, and to the left of unit "B", on the floor.
2. Bipolar 2-beds - Behind, and to the left of Bipolar mixed bed "A", about 4 feet from the floor.
3. M & P 2-beds - Behind, and to the right of, the combined return tank. There are two sets of valves on the floor in this area and the M & P effluent flow is controlled by the smaller of them. The effluent diversion for the combined 2-beds is handled automatically by a conductivity monitor in the drain line.

The effluent flow should be diverted to the sewer during the "backwash cation", "fast rinse cation", "backwash anion" and "final rinse", steps of the regeneration. It should be diverted to the waste water tanks during the "acid in cation", "slow rinse cation", caustic in anion", and "slow rinse anion" steps.

During the "acid in cation" and caustic in anion" steps of the regeneration, the specific gravity of the inlet regenerant chemicals should be checked. The procedure is as follows:

1. The specific gravity tester and graduated cylinder are stored in the cabinet in the environmental control lab.
2. Rinse the cylinder and tester with clean water.
3. Fill the cylinder with the water to be tested, empty it out and fill it again about 2/3 full.
4. Insert the tester into the solution.
5. Read the specific gravity from the stem of the tester where it emerges from the surface of the solution.
6. The samples are taken from the following points:
  - a. Acid - from sample valve "A" which is marked on the units.



ECP	37026	REV	C
PAGE	12	OF	21

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION

### Shift Operations Checklist

REF

ENGINEER

DATE

APPROVAL

DATE

- b. Caustic - from sample valve "B" which is marked on the units.
7. The proper specific gravity of the inlet regenerant water is as follows:
  - a. Acid - 1.023
  - b. Caustic - 1.043
8. If the specific gravity is too high or too low, the speed at which the acid or caustic is being drawn up must be slowed if the reading is too high and speeded up if it is too low. This is done by adjusting valves "A-1" (acid) or "C-1" (caustic), opening the valve to speed up the chemical draw and closing it to slow it down.

The flow rates of the various steps are present. However, during the regeneration, the flow rates should be checked to ensure that they are correct. The flow rates for the "acid in cation" and "slow rinse cation" steps are not adjustable. The proper rates for the other steps are as follows:

1. Make-up units
  - a. Backwash (same for both backwash steps) - 14 to 16 GPM.
  - b. Fast rinse cation - 25 GPM.
  - c. Final rinse - 20 to 25 GPM.
2. Bipolar 2-beds
  - a. Backwash (same for both backwash steps) - 18 to 20 GPM.
  - b. Fast rinse cation - 50 GPM.
  - c. Final rinse - 50 GPM.
3. Combined and M & P 2-beds
  - a. Backwash (same for both backwash steps) - 6 to 8 GPM.
  - b. Fast rinse cation - 15 GPM.
  - c. Final rinse - 15 to 17 GPM.



ECP	37026	REV	C
PAGE	13	OF	21

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION

Shift Operations Checklist

REF

ENGINEER

DATE

APPROVAL

DATE

The mixed D.I. units are all regenerated manually. The procedure is as follows:

### I. Regeneration of Combined mixed beds.

1. General - During the regeneration the effluent water must be directed to the drain water line. The valve for the purpose is marked #18 and is located behind, and to the left of each unit. Before beginning the regeneration, open this valve and close valve #17, located directly above it.

During much of the regeneration the effluent water is pure enough to be directed to the sewer instead of the wastewater tanks. This must be done manually and the valves are located on the floor behind, and to the right of the combined return tank. There are 2 sets of 2 valves in this area and the one controlling the combined effluent flow is the larger set. The sewer and waste tank lines are marked beside the valves.

### 2. Chemical Make-up

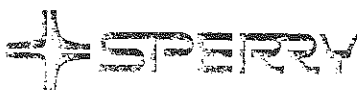
2.1 Acid - The acid day tanks are located on the right side of the units. Fill with 6 gallons of hydrochloric acid. The proper level is marked on the tanks.

2.2 Caustic - The caustic tanks are located on the left side of the units. Fill with 12 inches of soft water (first mark) and 6 gallons of sodium hydroxide (second mark).

### 3. Regeneration

#### 3.1 Backwash

- a. Open the valve directing the effluent flow to the sewer.
- b. Open valves 15 and 3.
- c. Open valve 4 and adjust to a flow of 6 GPM.
- d. Backwash for 15 minutes.
- e. Close valves 15, 3 and 4 and allow the resin to settle for 5 minutes.



ECP	37026	REV	C
PAGE	14	OF	21

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION

Shift Operations Checklist

REF

ENGINEER

DATE

APPROVAL

DATE

### 3.2 Acid and Caustic in

- a. Open the valve directing the effluent flow to the wastewater tanks. Close the vave to the sewer.
- b. Open valves 15, 6, 8 and 10.
- c. Open valves 7 and 9.
- d. When all the acid has been drawn up close valve 9.
- e. When all the caustic has been drawn up close valve 7.

### 3.3 Slow Rinse

- a. Slow rinse was started when valve 7 was closed.
- b. Allow the unti to slow rinse for 15 minutes, then close valve 10, 6, 8 and 15.

### 3.4 Combined Fast Rinse

- a. Open the valve directing the effluent flow to the sewer and close the valve to the waste tanks.
- b. Open valves, 1, 3 and 15.
- c. Open valve 10 and adjust to a flow of 12 GPM.
- d. Allow the unit to fast rinse for 20 minutes then close valves 1, 3 and 10.

### 3.5 Blow Down

- a. Open valves 5, 1 and 11.
- b. Allow the water level to blow down to approximately 6 inches above the resin bed.
- c. Close valves 5, 1 and 11.
- d. Open valve 14 slightly to relive the pressure inside the resin column.



ECP	37026	REV	C
PAGE	15	OF	21

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION

Shift Operations Checklist

REF

ENGINEER

DATE

APPROVAL

DATE

### 3.6 Air-Water in

- a. Open valves 3, 4 and 14.
- b. Open valve 11 and adjust to a flow of 6.75 SCFM.
- c. Open valve 15.
- d. Allow the water to flow for approximately 30 seconds then close valve 15.

### 3.7 Air Mix

- a. Air mix was started when valve 15 was closed.
- b. Do not change the setting on valve 11.
- c. Allow the unit to air mix for 15 minutes.

### 3.8 Air Drain

- a. Valves 3, 4, 11 and 14 are open from the preceeding steps.
- b. Close valve 4 and 14.
- c. Do not change the setting on valve 11.
- d. Open valve 10.
- e. When the water level has dropped to the top of the resin bed and the resin has settled, close valve 3 and 10 simultaneously, then close valve 11.
- f. Open valve 14 slightly to relive the pressure in the resin column.

### 3.9 Fill

- a. Open valves 1 and 14.
- b. Open valve 16 gradually so the tank fills slowly, disturbing the resin bed as little as possible. Gradually increase the flow as the tank fills.
- c. When the water flows through valve 14 and appears in the sight glass, close valves 14, 1 and 16.



ECP	37026	REV	C
PAGE	16	OF	21

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION

Shift Operations Checklist

REF

ENGINEER

DATE

APPROVAL

DATE

### 3.10 Service Rinse

- a. Open valves 1 and 16.
- b. Open valve 5 and adjust to a flow of 15 GPM.
- c. Allow the unit to rinse until the conductivity meter indicates 1 micromho, then open valve 17 and close valve 17.
- d. Allow the rinse to continue to the return tank until the conductivity meter indicates .063 micromho.

### 3.11 Service

- a. Open valve 2 and close valve 5.

## II. Regeneration of Bipolar mixed beds.

1. General - During the regeneration, the water must be directed to the sewer or the waste water tank. The valves for this purpose are located behind, and to the left of, each unit and are marked #16 and #17. Valve #16 directs the flow to the waste tanks and #17 directs it to the sewer. In the same area, valve #18 directs the flow to tank #1 and must be closed prior to regenerating. The polishers have another valve (#19) in this area which sends the water to tank #2. This too must be closed before regenerating.

## 2. Chemical Make Up

### 2.1 Acid

- a. The acid day tank is located on the right side of the units. The central mixed beds are filled with 10 gallons of hydrochloric acid and the proper level is marked on the tanks.
- b. The polisher acid tanks are filled with 14.5 gallons of hydrochloric acid and the proper level is marked on the tank.

### 2.2 Caustic

- a. The caustic tank is located on the left side of the units. The central caustic tank is filled with 24 gallons (first mark) of soft water and 11.3 gallons (second mark) of sodium hydroxide.



ECP	37026	REV	C
PAGE	17	OF	21

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION

Shift Operations Checklist

REF

ENGINEER

DATE

APPROVAL

DATE

- b. Both polishers use the same caustic tank which is filled with 36 gallons (first mark) of soft water and 17 gallons (second mark) of caustic.

### 3. Regeneration

#### 3.1 Backwash

- Close valve 18 and open valve 17.
- Open valves 15 and 3.
- Open valve 4 and adjust to a flow of 15 GPM (20 GPM for the polisher).
- Allow the unit to backwash for 15 minutes.
- Close valve 4, 15 and 3 and allow the resin to settle for 5 min.

#### 3.2 Acid and Caustic in

- Close valve 15 and open valve 16.
- Open valves 15, 6, 8 and 10.
- Open valves 7 and 9.
- When all the acid has been drawn up close valve 9.
- When all the caustic has been drawn up, close valve 7.

#### 3.3 Slow Rinse

- Slow rinse was initiated when valve 7 was closed.
- Allow the unit to slow rinse for 15 minutes, then close valves 15, 6, 8 and 10.

#### 3.4 Combined Fast Rinse

- Close valve 16 and open valve 17.
- Open valves 1, 3 and 15.
- Open valve 10 and adjust flow to 30 GPM. (50 GPM for the polisher). Allow the unit to fast rinse for 20 minutes then close valves 3, 10 and 15.



ECP	37026	REV	C
PAGE	18	OF	21

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION

Shift Operations Checklist

REF

ENGINEER

DATE

APPROVAL

DATE

### 3.5 Blow Down

- a. Open valves 5, 1 and 11.
- b. Allow the water level to flow down to approximately 2 inches above the resin bed.
- c. Close valves 11, 5 and 1.
- d. Open valve 14 slightly to relieve the pressure in the tank.

### 3.6 Air and Water in

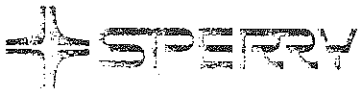
- a. Open valves 3, 4 and 14.
- b. Open valve 11 and adjust to a flow of 25 SCFM (38 SCFM for the polisher).
- c. Open valve 15.
- d. Allow the water to flow for 30 seconds, then close valve 15.

### 3.7 Air Mix

- a. Air mix was started upon closing of valve 15.
- b. Do not change the setting of valve 11.
- c. Allow the unit to air mix for 15 minutes, then close valves 3, 4, 11 and 14.

### 3.8 Air Drain

- a. Open valves 5 and 12.
- b. Adjust valve for flow of 25 SCFM (38 SCFM for the polisher).
- c. Valve 5 should be wide open.
- d. When the water level reaches the top of the resin bed and the resin is settled, close valves 5 and 12 simultaneously.
- e. Open valve 14 slightly to relieve the pressure inside the tank.



ECP	37026	REV	C
PAGE	19	OF	21

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION

Shift Operations Checklist

REF

ENGINEER

DATE

APPROVAL

DATE

### 3.9 Fill

- a. Open valves 1 and 14.
- b. Open valve 13 gradually so the tank fills slowly, disturbing the resin bed as little as possible. Increase the flow as the tank fills.
- c. When the water flows through valve 14 onto the floor, close valves 14, 1 and 15.

### 3.10 Service Rinse

- a. Open valves 1 and 13.
- b. Open valve 5 and adjust for a flow of 50 GPM.
- c. Allow the unit to rinse to the sewer until the conductivity meter indicates 2 megohms, then open valve 18 and close valve 17.
- d. Allow the rinse to continue to the D.I. water tank until the conductivity meter indicates 15 megohms.

### 3.11 Service

- a. Valves 1, 5 and 13 are open from the proceeding step.
- b. Open valve 2 and close valve 5.

NOTE: In order to achieve a good resin separation, it is necessary to exhaust the unit to be regenerated by drawing sodium hydroxide through the resin bed before separation. This is done as follows:

1. Make up the caustic day tank to normal levels.
2. Close all valves.
3. Close valve 17 and open valve 18.
4. Open valve 6 and 5, 15 and soft
5. Open valve 7 to draw caustic from the day tank.
6. When the caustic is drawn up, close valve 7.



ECP	37026	REV	C
PAGE	20	OF	21

## ENVIRONMENTAL CONTROL PROCEDURE

DETAIL DESCRIPTION	REF
Shift Operations Checklist	

ENGINEER	DATE	APPROVAL	DATE
----------	------	----------	------

7. Allow the unit to rinse 10 minutes, then close valve 6 and 5.
8. Open valve 1 and adjust valve 5 for a flow of 30 GPM.
9. Allow the unit to rinse 5 minutes, then close valves 1 and 5.
10. Proceed with the regeneration.

## ENVIRONMENTAL CONTROL PROCEDURE

### DETAIL DESCRIPTION

#### Appendix #3 Procedure for Changing Filters

### REF

### ENGINEER

### DATE

### APPROVAL

### DATE

When the filters become plugged, the pressure gauges will show an unacceptable pressure drop. When this occurs, the filters must be changed to ensure proper water flow and, to avoid introducing bacteria into the system, care must be taken to avoid contaminating the new filters.

The filters are stored on the shelves to the left of the double doors in the north wall of the D.I. equipment room. The filter numbers are as follows: .45 micron - MDY 1003 UP; 3 micron - MDY 1003 DC (long); 3 micron-MCY 1001 DC (short); 10 micron - MCY 1001 DE; .2 micron - AB3NA7E (long); and .2 micron AB1NA3E (short).

Change the filters as follows:

1. All the filters are contained in sets of two housings except the point of use filters. When changing these, the lab must be notified of the shutdown. For the others, turn off one set of filters.
2. Remove the small plug at the bottom of the filter housing. Do so slowly to relieve the pressure inside.
3. Remove the cover and remove the nut at the top of each filter.
4. Remove the old filters.
5. Install the new filters by removing them from the plastic bags (gloves must be worn and are stored in the lab) and pressing the two gaskets with them into the ends of the filters.
6. Replace the housing cover and remove the small plug at the top of the housing. Replace the plug at the bottom.
7. Open the housing inlet valve slightly and allow the housing to fill. Replace the top plug.
8. Open the inlet and outlet valves and check the pressure drop. Also check for leaks.

BLANK PAGE  
FOR FUTURE EXPANSION  
PAGES 116 - 142